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SEPTEMBER 1956

35 CENTS

Young Men®

THE MAGAZINE FOR TOMORROW'S TECHNICIANS AND ENGINEERS

**U. S. ARMY
CAREER ISSUE**



Air-Pix Roundup: Those Fabulous MINI-COPTERS

MODEL BUILDING HIGHLIGHTS ● Walt Pyron's "Black Hawk" Stunter
● D.C.-Powered "MG" For R/C Pulls "Battery Box" House Trailer
● Secrets of Easy Covering by Harry Royse ● "USR-56" Training Plane

Radio Control by Howard McEntee: "Mac-Junior" 27.255 MC

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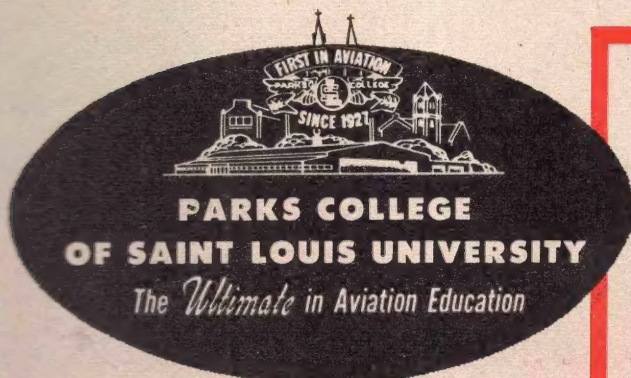
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Young Men

SEPT., 1956 • VOL. 46, No. 6

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C and Q

Your Comments and Queries are welcomed by the editors; shoot along those questions to 'em!

Substitute 18 for 10 . . . I'm looking for some down-to-earth suggestions on trouble-shooting model engines. Can you suggest anything along these lines?

Ed Friend, Saco, Maine

• Sure can, friend Friend. See "Twenty Reasons Why Your Engine Won't Start" in the August '56 issue of "Young Men." BUT MAKE THESE TWO CORRECTIONS TO THE CHECK LIST: Substitute the numbers 18 for 10 in the two spots shown below.

Satisfied Customer. As an officer currently on Active Duty, I certainly enjoyed your coverage of opportunities offered in the Air Force Career issue. This should aid in encouraging many young men to investigate the situation completely and give more serious thought to this branch of the Armed Forces.

1/Lt. Wilbur Blount, Holloman AFB, New Mex.

Schools for Diesel Technician . . . I want to take up diesel electrical technology. Please give me the names of two-year technical institutes that offer this course at the college level of training. Do any of them operate on the co-op plan—that is, arrange for you to alternate periods of study with equal periods of work at regular salary?

Gordon Hartzell, Brockway, Pa.

• The following technical institute type schools offer Automotive and Diesel Technology in the general field of Electrical Technology (those schools marked with an asterisk also give Steam and Diesel in the general field of Mechanical Technology):

1) Broome County Tech. Inst., Binghamton, N. Y. 2) Hudson Valley Tech. Inst., Troy, N. Y. 3) Long Island Agric. & Tech. Inst., Farmingdale, N. Y. 4) New Bedford Inst. of Textiles & Technol., Mass. 5) N. H. Tech. Inst., Portsmouth. 6) N. Y. State Agric. & Tech. Inst., Alfred. 7) N. Y. State Agric. &

Tech. Inst., Canton. 8) N. Y. State Agric. & Tech. Inst., Morrisville. 9) N. Dak. State School of Sci., Wahpeton. 10) Oregon Tech. Inst., Oretch. 11) Multnomah College Tech. Div., Portland, Ore. 12) Spring Garden Inst., Philadelphia. 13) College of William & Mary Tech. Inst., Norfolk, Va. 14) *Okla. A&M College—School of Tech. Training, Stillwater. 15) Southern Ill. Univ. Vocational-Tech. Inst., Carbondale. 16) W. Va. Inst. of Technol., Montgomery. 17) *Franklin Tech. Inst., Boston. 18) *LeTourneau Tech. Inst., Longview, Texas.

The following schools offer courses in Steam and Diesel only, as part of Mechanical Technology:

1) Wentworth Inst., Boston. 2) Univ. of Houston Tech. Inst.

The only two-year school with the co-op plan in automotive and diesel technology we know of is Broome County Technical Institute, Binghamton, N. Y.

Tenrai's Friend . . . In your 1953-54 "Air Progress" on page 74 appears a photo of the Japanese J5N1 (Tenrai). At its right is another plane's wing. It looks like an Me-262. If so, how did it get there?

Earl Donner, New London, Conn.

• Photo of J5N1 Tenrai was taken in the United States, we believe at Patuxent River, Md. Naval Air Station where a number of captured Japanese planes were on display. The jet in the background is not an Me-262, but a Japanese experimental plane called "Kikka." It was based on the Me-262 design, but scaled down from drawings shipped to Japan by Germany via submarine. The engines were small versions of the Jumo turbojet called Ne 20, rated power was 1,100 lbs. thrust each. They were installed in an airframe designed by the Japs. As far as we know, only two were built. One was wrecked during early test flights and the second captured by U.S. troops and shipped to United States.

One-Man Glider . . . I would appreciate it very much if you would send us information for obtaining plans for a one-man glider. We are willing to pay for suitable plans.

Ted Bara, Jr., Linden, N. J.

• We suggest you write to the Soaring Society of America, Box 71, Elmira, N. Y.

Finnish Air Force . . . I would like to know if Finland has any kind of air force and if so, has it any planes designed and built there?

Tom White, Elko, Nevada

• Yes, Finland has a small air force. Under the peace terms of World War II it is permitted to maintain an A. F. of 60 airplanes and a personnel strength of 3,000 officers and men. It cannot have any bombers and experiment with or build guided missiles. The Air Force consists of a number of Messerschmitt Me-109G fighters, some Douglas DC-3 transports, Focke-Wulf FW 44's, Vima and Pyry trainers. The last two aircraft are of Finnish design and construction.

As far as we know there are no plans or kits for Finnish planes available.

SYMPTOMS

Won't fire	1, 2, 20, 3, 4, 8, 9, 19
Fires each flip but does not keep running	3, 4, 12, 13
Stops when battery is disconnected	18
Runs out prime and stops	4, 5, 6, 16, 7, 17
Does not run at steady speed	13, 18, 11, 8, 9
Runs steady but does not rev up	14, 10, 8, 9, 11

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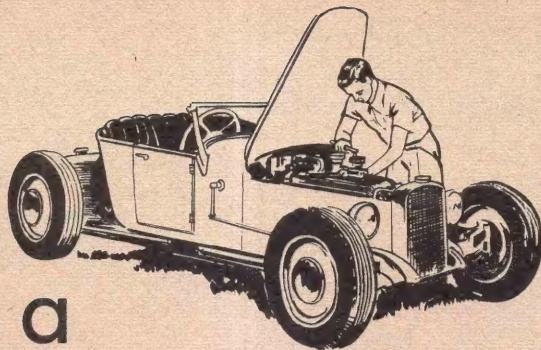
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• We cannot accept responsibility for unsolicited manuscripts or art work. All contributions must include return postage. The editors regret that because of the large number of entries they cannot enter into correspondence concerning any of YOUNG MEN'S design, photo or modeling competitions, nor can such entries be returned. Printed in U.S.A.



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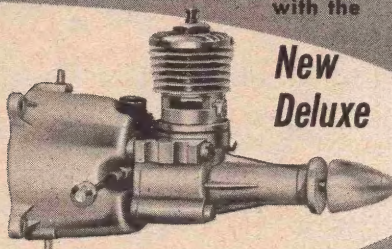
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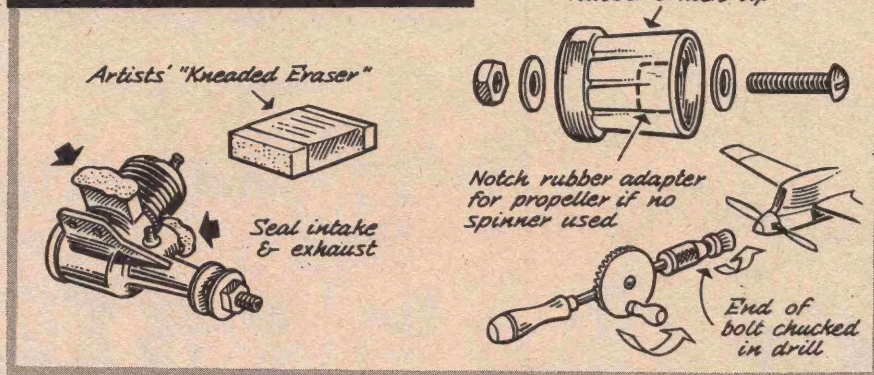
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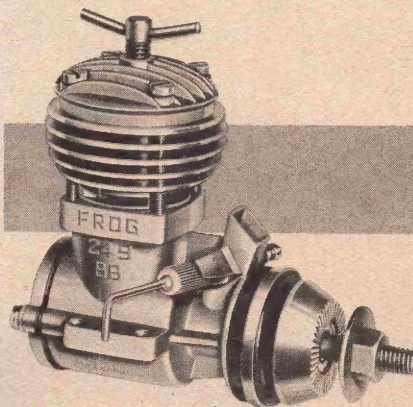


■ Winners of the \$10 award for accepted Sketchbook items for this department this issue are Wisconsin and California modelers. Remember—Young Men pays \$10 for each original idea accepted and presented anywhere in the magazine. Surely you have some pet scheme, gadget or a construction method that makes modeling more fun or less expensive. Shoot it in to "Modeler's Sketchbook", c/o YM (304 E. 45th St., NYC 17).

Dust-proof Storage. That's what we have here. Soft, putty-like "kneaded eraser" is ideal material for sealing intake and exhaust ports of model engine prior to storage reports Mike Jon Miller, Huntington Beach, Calif.

Simple Engine Starter. Balking A/2 engines can be started easier by use of this handy gadget. Crutch tip adapter fits propeller or spinner. Drill is "backed up" for anti-clockwise propeller rotation. Idea from Richard Hoen, Eau Claire, Wis.

English Engines. International Model Aircraft, Ltd., of London, England, advises us that the World Engines concern in this country will be handling Frog engines. We have had an opportunity to examine the Frog 1.49 cc. (.09 cu. in.) "diesel" which features what International calls its "vibramatic" induction system, and the Frog 2.49 cc. diesel (.152 cu. in. displacement). Both are ball-bearing jobs; the "149" will be selling for \$8.85, the "249" for \$14.95. Where the Frog "Powa-Mix" fuel is not available the following mixtures are recommended: for the "149"—35% ether, 30% kerosene, 32% castor oil, 3% amyl nitrate; for the "249"—38% ether, 28% kerosene, 30% castor oil, 4% amyl nitrate.



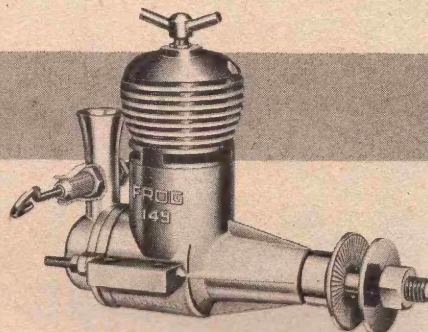
More Plastic Props. Top Flite Models now marketing new plastic props for Half-A engines. Come in 4 sizes: 5 1/4" diameter, 3" pitch; 5 1/4/4; 6/3; 6/4. Sell for 15c apiece. Described as fuel-proof and break-resistant.

Test Stands. We winced when we see novice flying fans clamping an engine in a vise to see how it runs. Great way to damage a powerplant. Much wiser to use a test stand, one like the E-Z-Just, for instance. This wooden stand holds and locks your engine in place in a couple of seconds. Comes in two sizes, one for small engines (called Mini-Mount) selling for \$1.25, and the other for larger power plants, \$1.75.

These test stands are manufactured by Phil-Leys which also puts out the E-Z-Just plastic control handles in 4 and 5" sizes. Each has 21-strand flexible steel cable leaders with pre-formed loops.

Why Your Engine Won't Start. If you've been having trouble with your powerplants we hope that you saw the informative and interesting "Twenty Reasons Why Your Engine Won't Start" in the previous (August, 1956) issue of Young Men. The author, Aubrey Kochman, who was closely associated with the design, making, testing, sales and servicing of model engines for many years, pointed out that "in the majority of cases hard starting is not the fault of the engine. It is more likely to be your own fault or your inability to diagnose properly the cause. Internally there is practically nothing that can be wrong or broken on a new engine, so don't take it apart just to satisfy an inquisitive nature..."

We recommend this article with its accompanying check list of troubles and their cure to all modelers. On list correct by changing #10 in 1st and 3rd lines to #18.





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■ We want you Air Adventurers to meet a real hot, yet real "cool" pilot, Col. Royal Newman Baker of the USAF. Col. Baker was the second double-ace (10 "kills" to qualify) to come out of the Korean war; he accounted for 12 MiG-15's flying F-86 Sabre jets. Altogether he's flown 399 combat missions—272 in World War II, 127 in Korea.

Now stationed at Air Defense Command headquarters at Ent AFB, Colo., Col. Baker has been on such interesting assignments as Project Officer for the F-102 delta wing interceptor. A real air adventurer!

Membership Applications. An AAC membership application form appeared in last month's column. Have you sent yours in yet? For 50c registration fee you receive membership card, AAC membership emblem, and the "Aircraft Handbook" of USAF airplanes. Send your name and address (print clearly) and fee to Air Adventurers Club, Box 75, Boulevard Station, New York 59, N.Y.

Team Work. We Americans like to form clubs or groups of friends who have similar interests.

It is recommended that Air Adventurers get together with friends, neighbors and schoolmates to form a local unit of the Air Adventurers Club.

Organizing An Air Adventurers Club. First step is to decide how large such a club should be. This is governed both by the number who wish to join and the size and facilities of available meeting places. If your clubroom or headquarters is to be in a private home, it is wise to limit the club membership to about ten. Larger club memberships work out well where adequate meeting space is available. Many clubs have arranged for meeting space in churches, YMCA's, schools and through local service clubs such as the Rotary, Exchange, or Chambers and Junior Chambers of Commerce. It is highly desirable that work space be arranged in order that model building projects can be handled during club meetings.

Second step is to locate a responsible adult who will serve as Senior Advisor to the club. The Senior Advisor could be the dad or mother of one of your club members or a teacher or other adult who will not "run" the club but who will assist in organizing it, maintaining order at meetings and speaking for the club to sponsors, municipal authorities and similar persons or groups when club members cannot do so effectively. It is



U.S. Air Force's Colonel Baker.

helpful if the Adult Advisor has some experience in building and flying model airplanes, but this is not absolutely necessary as long as he or she is interested in the welfare of the club and its members.

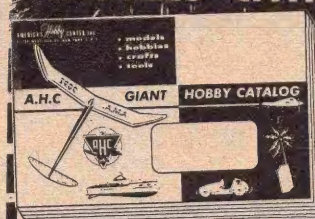
Next, call an organization meeting of your group being sure that your Senior Advisor attends. This organization meeting can be directed by a temporary chairman selected by popular vote. Usually the person who has taken the initiative to call the meeting is a good choice. As soon as the chairman is elected and installed, he should conduct a general discussion of the club and its program, time and place of regular meetings and

(Continued on page 40)

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GROUP 953—WONDERWINGS R/C biplane by "Cal" Smith, 44" span. Semi-scale. **SALTY DOG CABINETTE** R/C cabin cruiser by Frank Ehling, 27½" long. Features "easi-saw" construction details.

GROUP 1253—"ROCKET RACER" C/L, guided missile appearance, 18" span. "SASKIE" by A. G. Ackerman, 26½" span, Jetex. "JERSEY LIGHT-NIN" by Cal Smith, R/C Goodyear type racer, 53" span.

GROUP 754A—OVER AND UNDER, Harold deBolt's stunt R/C plane for .19 to .23 engines. Spans 65½"; 45" fuselage.

GROUP 155—PIPER CUB J-3, R/C flying scale model by Hollinger. Spans 70"; length 44". **LITTLE ARKY**, scale-type Arkansas house boat. Length 12½"; beam 4½"; height 4½".

GROUP 355—DIXIE Side-Wheeler R/C paddle boat by Frank Van Buren. Length 23½"; beam 17"; height 12½". Electric power.

GROUP 555—SKYDELTA by Donald Broggini, a R/C flying wing, .074 engine; spans 28"; 36" long. **PUG-NOSE RACING PRAM** by William "Bill" Baughman, 14" length scale model of Chris-Craft's 10' pram. For outboard glow-plug engine. Beam is 6¼".

GROUP 655—PSUEDO-SUB by Frank Van Buren. Working R/C sub model. Waterline version. Electric or glow engine power, 60" long, 18½" height, 6" beam.

GROUP 755—ELIMINATOR is J. Reed's scale-like R/C model plane. Spans 6'; length 42". Uses power plants of .15 cu. in.

GROUP 855—R/C NAVY LANDING CRAFT—Scale model LST by Walter Musciano for electric power, 30" length; 8½" beam; 11" height.

GROUP 955—NAUTILUS by Frank Lashok and Cal Smith. Electric power submarine for surface operation. Length 56", height 11"; beam 4½".

GROUP 256—"BUNKER BOAT" by Cal Smith and Frank Lashok. Fishing boat model for electric power; can be R/C; scaled 5/16"-1"; 35¼" long; 6¼" beam.

GROUP 256A—STATELY SADIE scale-like R/C high wing monoplane by Frank Ehling. Takes Cub .14 or similar engine. Spans 50", overall length 38".

GROUP ATASS—STATEN ISLAND FERRY BOAT by Walter A. Musciano. Steam engine or electric motor. Perfect for R/C. Length 29½"; beam 7¼"; height 8½".

GROUP ATA 55B—LAST OF THE MONOCOUPES by S. Calhoun Smith, R/C flying scale for .15 engines. Tricycle gear. Span 58"; length 37¼".

GROUP R101—MAC'S ROBOT by Francis McElwee, R/C, F/F model. Span 60"; fuselage 41". McCoy .19 BUILD YOURSELF A BEEP BOX

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Tech GUIDE



... SCHOLARSHIPS ...

... CAREERS ...

... SCHOOL NEWS ...

ARMY R.O.T.C. FACT SHEET. The U. S. Army has Reserve Officers Training Corps units in 243 colleges and universities—more than any of the other services. As is true with the other Armed Forces, in schools where the program is elective the usual practice is to give it in place of physical training in the freshman and sophomore years. Advanced work in junior and senior years is optional, but may be taken only by those considered qualified. You receive around \$27 per month for advanced training. As a part of advanced, you must attend a six-week summer camp at a military post, for which the pay is \$114 a month. On graduation you get a diploma as a reserve lieutenant as well as the one with a B.S. or B.A. on it. Of course, you then still have a six-year military obligation to Uncle Sam including two years of active duty.

A chief advantage of R.O.T.C. is that it enables a student to finish college without interruption and at the same time qualify for a commission, in the Army Reserve.

ARMY WILL HELP YOU CONTINUE CIVILIAN EDUCATION. It's just hard, common sense. The more planned education you receive while in uniform the

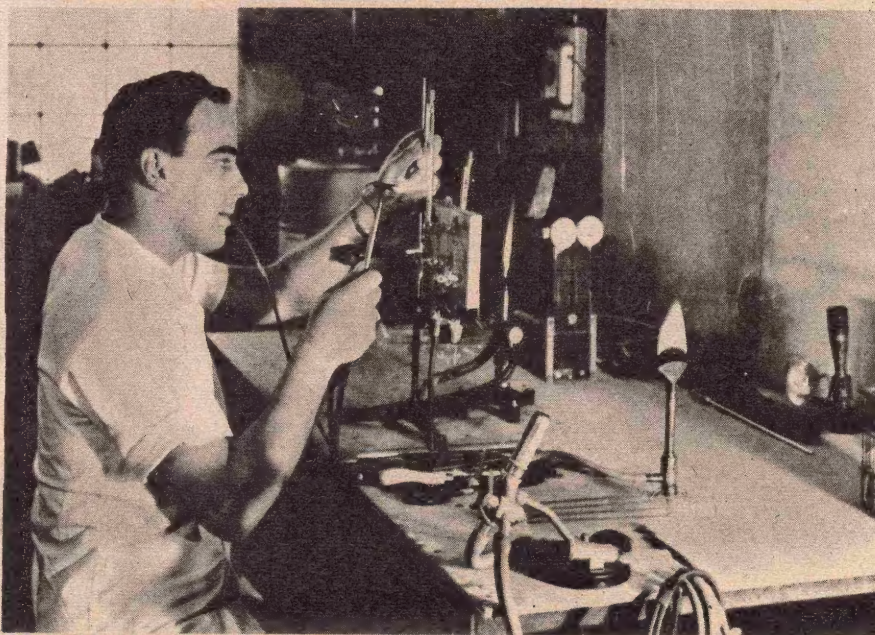
better asset you'll be to the service (it increases your chances to assume higher, more responsible grades, for example), and the better asset you'll be to the country on discharge (it makes you more valuable to industry and defense effort, a better citizen, etc.). That's why the Army does all it can to further your studies in civilian-type education, as well as the "on-duty" type which may have a civilian as well as a military value and is discussed elsewhere in this issue. (Incidentally, the photograph below, courtesy U.S. Army, shows an enlisted technician blowing glass for experimental equipment in Medical Field Research Lab at Fort Knox, Ky.) As for civilian education, here's how:

Along with the other services, Army encourages soldiers to take correspondence courses offered by U.S. Armed Forces Institute. These are at the level of elementary, high school, college and technical-vocational school. There are at least 15 courses of the latter kind, in auto mechanics, photography, radio and TV, etc. In general, you may take languages, literature, sciences and the like. Depending on evaluation by the civilian school of your choice, you can get credit for USAFI courses toward a diploma or degree. Cost: \$2 enrollment fee for first course.

Group study courses are offered wherever practicable, with instructors from nearby schools—vocational, high or college—coming to camp and holding classes in available subjects most desired. This program is a boon to the individual who is working toward a high school or college diploma. (Note: Army wants you to finish high school first, as do the other services.)

Then there are the "residence" courses, meaning that soldiers stationed near a civilian school with which the Army has arrangements may attend classes there in person as an off-duty activity. These may be colleges or universities or at lower levels, and credit may be applied toward a diploma or degree. Uncle Sam pays up to 75% of the cost of tuition at such schools in this country. Soldiers stationed overseas are privileged to attend branches established by certain universities for the benefit of military personnel, with regular faculty members as pros and full residence credit allowed. Examples: Louisiana State has set up

(Continued on page 65)



HIGH SCHOOL GRADUATES!

**"My Army job training
WAS MADE
TO ORDER!"**

PVT. JAMES D. STEWART
Page, Nebraska
Graduate, Page High School



**"Yours can be, too—
if you choose it before enlistment!"**

"That's the way I did it. I picked just the training I wanted—an automotive ordnance course—and all before I enlisted in the Army. Some buddies told me about this chance to advance my education by reserving the technical schooling I wanted. But until I saw my recruiter I never knew so many different subjects were taught—practically everything. I found just the right course for me—so can you! And it's really excellent training. The Army taught me more in my ten-week course than I'd learn in a year at a commercial school. Now I'm working right in my field—piling up valuable experience. This technical training program is sure a good idea for high school graduates. I think you ought to look into it!"

James D. Stewart

Over 100 courses available

You'll find the right career training for you, too, at one of the fine Army technical schools. There are over 100 courses to choose from—aviation, photography, medicine, finance, communications—almost anything you

want. And the course you *pick* is the course you *get*! You receive a written guarantee that a place in class is reserved for you—all before *enlistment*! It's the *right* way to enter the Army because it's *your* way!

How you can qualify

If you have a high school diploma or its equivalent, or if you are a high school senior, you can reserve your Army schooling *right now*! See if this isn't just the deal you've been looking for. For full details, clip this coupon and mail it today!

FILL OUT COUPON AND MAIL IT TODAY!

THE ADJUTANT GENERAL
Department of the Army,
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Attn: AGSN

YM 56-6

Please send me the Army booklet describing special opportunities for high school graduates.

Mr.

Address

City..... State..... Date of Grad.....

Get CHOICE, not chance, in the Army!



HOW MANY MEN IN THIS PICTURE?

■ If you say “five” you’ll be right — and wrong. For while there *are* three men in the gun crew and two manning the Army’s new MPQ-10 Mortar Locator, there are many, many others in the picture. Among them are scores of Army men working hand-in-hand with the engineers of industries such as ours.

■ Development of the MPQ-10 is just one example. The result of the joint

efforts of the Army Signal Corps and Sperry engineers, this completely mobile unit utilizes radar to plot the course of an oncoming mortar shell, then traces the shell back to its point of origin. With the information it provides, the gun crew blasts the enemy battery out of existence — and fast. Result: Another American reason why *possible* aggressors today think twice before becoming *actual* aggressors.

■ When you join today’s Army, you’re “in the picture” more than ever before. Your opportunities are virtually unlimited, working with the most brilliant men in every field of science. You get training that helps you get ahead fast — training no amount of money could possibly buy. And you have the satisfaction of knowing you’re doing a real job — for yourself and for your country, when you choose a military career.

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The United States Army



GENERAL TAYLOR

“ The Army is an intimate part of America—founded in 1775, it is fourteen years older than the United States itself. It is our oldest military service, having fought all of America's wars in defense of this nation.

“ This is no longer the Army of just riflemen, clerks, cooks, cannoneers, and the like. The artillery gunner of World War II, while he might have served any one of several weapons, must now specialize to serve the 280-mm atomic cannon, the Honest John rocket, the Nike and Corporal guided missiles, or any one of several other types of artillery.

“ The Army is one of the biggest business enterprises in the world, having capital assets in real estate, supplies, equipment, and various holdings to the value of over 52 billion dollars. The hardware which represents the equipment and supplies in the hands of our troops and in our depots amounts to about 25 billion dollars, and we have the problem of obsolescence of material at an annual rate of over a billion dollars. In terms of personnel, the Army has on its payroll over one million soldiers and around 430,000 civilians. It is a global Army, scattered in bases about the world with some 40 percent of it serving overseas in 73 countries.

“ The more the Army reflects upon its role in the future with its requirement to resist aggression promptly at any place, at any time, we are impressed with the need for greater strategic mobility.

“ The Army will carry to the battlefield of the future destructive power vastly in excess of anything that has ever been imagined in the past. By possessing both conventional and nuclear weapons, the Army can adjust the power of its blows to the situation at hand. I feel that there is great military significance in the fact that the Army has weapons which vary from the MP's pistol to the kiloton yield of heavy atomic weapons. This gradation in the effect of our weapons gives a great flexibility in the application of the military power of which the Army disposes.



Excerpts from speeches by
General Maxwell D. Taylor
Chief of Staff, United States Army



One of the men and one of the machines behind the missile. Center photo shows

the powerful Redstone ballistic missile being fueled, checked at Patrick AFB.

■ Jukeboxes around the country have been playing a swing arrangement of an old army marching song about "The Dogface Soldier" who calls himself "the walking pride of Uncle Sam."

Today's Army, however, is manned not only by "dogface soldiers" of the infantry and other combat arms but also by a corps of highly trained specialists and technicians who are needed to maintain and operate the complicated machinery of a modern military force.

The "Dogface Soldier" of the modern Army has got to do far more than march with a rifle on his shoulder. And behind each combat soldier there must be ten trained as technicians and specialists.

Our Army is roughly divided into three segments—the arms, services, and special branches.

The arms are Infantry, Armor, Artillery, Corps of Engineers, Signal Corps.

The services include the Adjutant General's Corps, Chemical Corps, Finance Corps, Military Police Corps, Ordnance Corps, Quartermaster Corps, and Transportation Corps.

The special branches are the Medical Corps, Mental Corps, Veterinary Corps, Medical Service Corps, Judge Advocate General's Corps, and Chaplains.

And there is the newest career field—Army Aviation.

The Army is a pretty vast establishment (with just over a million men on active duty at the present time) and so it would be sheer nonsense to pretend that every soldier gets the assignment he wants or the job for which he feels he is best qualified. Assignments are pretty much a matter of what the Army's requirements happen to be *plus* a careful analysis of each individual's background and his latent capabilities based upon aptitude tests.

Career Fields for Direct Enlistment

Under certain conditions it is frequently possible for a man who signs up for a three or four year hitch to enlist for a specific assignment. It is important to remember that each field has a limited quota. Usually the recruiting specialist in

your home town knows, or can find out, whether there are openings at the time you are about to begin *your* Army career.

These are the career fields in which direct enlistments were possible at the time this report was completed:

1. Branch of Service. Generally speaking a man who enlists for three years or more is privileged to pick his branch of service—i.e., infantry, artillery, signal corps.

2. Army Disciplinary Barracks. These assignments are controlled by the Military Police Corps. Openings are for men who are trained as, or who have qualifications to become, specialists in the field of penology.

3. Overseas Commands. To a limited degree new recruits can sometimes enlist directly for specific overseas assignment. No one is actually permitted to ship out until he has completed basic training. New entrants into the Army may, at this time, sign up for our "frontier-guard" forces in Korea. This calls for a 16-month tour of duty in war-torn Korea, the remainder of the enlistment to be spent in the United States.

4. Gyroscope Units. When the Department of Army designates an outfit as a "Gyro" unit it is permitted to accept direct enlistment of men who will train with the unit and accompany it overseas and, if possible, remain with it when it is ordered back to the U.S.

5. Army Security Agency, and

6. Counter Intelligence Corps. Both of these involve investigative and sometimes undercover work. There are tight quotas based upon current need and the individual's qualification. Both of these agencies seek men with college degrees.

7. The Army Band. Besides the U.S. Army Band and the U.S. Army Field Band, both stationed in Washington, there are numerous other openings for military bandmen. To become a member of an Army band a musician must be fully trained prior to enlistment. Applicants are generally auditioned at an Army post near their home. Many Army bandmen receive additional training at the U.S. Naval School of Music, Washington, D.C.

Technical Careers in the U.S. Army

Mobility, missiles and highly trained technicians make up America's modern Army. More than ever before this branch offers a fascinating career to mechanically-minded young men.

By BRUCE JACOBS

8. Antiaircraft Artillery. This involves, principally, enlistment for training and subsequent assignment as a member of a NIKE crew. This means being stationed in one of the many gun sites located around key cities and industrial centers.

9. Special Forces. The Army's toughest fighting men who can fight anywhere at any time, the Special Forces are both rangers and paratroopers. Their headquarters are at Fort Bragg, North Carolina.

10. The High School (Army Technical School) Program. Here is a way for high school men to make specific plans for an Army career as a specialist even before they take the oath of enlistment.

Army Life

No one with any good sense has ever tried to peddle the line that a soldier is pampered and that his life is a bed of roses. Soldiering is distinctly a man-sized job. And because a military man relinquishes certain things when he joins the service, the government reciprocates in certain ways.

Thus, you find that the soldier gets free medical and dental care. He is authorized to shop at a Post Exchange and a Commissary where prices are generally lower than on the outside. He pays an income tax only on his base pay (the money he receives for quarters and food allowances are not taxed). He can bank his money in Soldiers' Deposits which pays 4% interest.

Every man receives, without cost, a \$10,000 life insurance policy. When he moves from one post to another his dependents receive travel allowances. He is the recipient of a fairly generous scale of reenlistment bonuses and he may obtain a government-guaranteed loan if he wishes to purchase a home. He is the beneficiary of a retirement plan that would cost the average civilian \$100,000. A Master Sergeant who retires after 30 years (regardless of age) gets \$251.55 a month for life.

You *must* be a high school graduate to qualify for most of the Army Technical Schools and for Officer Candidate School.

A word about the unusual aspects of the High School Program which was mentioned briefly a few paragraphs back. This program has come about because it is urgent for the Army to train young men in a wide variety of exciting fields ranging from atomics to heavy construction.

This program should be of special interest to the readers of *Young Men*. To begin with the applicant must be a high

school graduate. From either the high school counselor or an Army recruiting specialist it is a simple matter to obtain booklets which describe the program in detail.

From a long list (of far more than 100 categories) select the career specialist field which is of interest to you. Send a letter of application for the course of your choice, along with a letter from your high school principal or some other civil leader (plus a transcript of your high school record) to The Adjutant General, Department of the Army, Washington 25, D.C. Attention: AGSN-P.

The Army gives these applications top priority and you should have an answer within 15 days. If you have met with the high standards required for enrollment in the program you will receive a letter stating that a school vacancy has been reserved for you. It is then up to you to enlist in the Army and prepare yourself for attendance at the school following the completion of basic training.

There's a wide range of Army careers open through this training program. The general scope includes combat, electronics, electrical maintenance, precision maintenance, military crafts, motor maintenance, and special assignments. Alphabetically these jobs range from Artillery Ballistics Meteorology to Structural Steel Working. There are courses for Atomic Weapons Assembly Specialists, Electronic Counter-measure Operators, Guided Missile Electronics men.

There are openings for helicopter repair men, soldiers who must be able to do cable-splicing, telephone installation and repair; who can keep records, who are expert at canvas and leather repair; who can maintain office machinery, who can cook and bake, who are qualified as harbor divers, marine hull repairmen, crane shovel operators; who can work as railway trainmen, as cryptographers, teletype operators, as public information specialists, as motion picture or still camera photographers—to mention only a scant few.

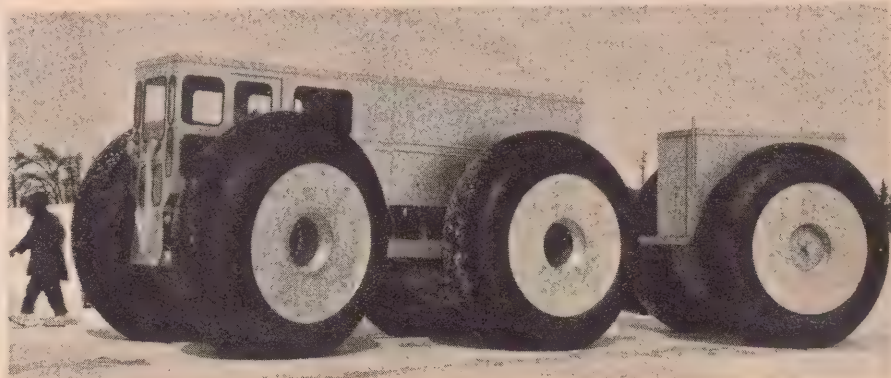
Every Man a Soldier

Everyone starts his Army career with Basic Training. And the first eight weeks of basic are the same whether you are going to be an electronics expert, a precision maintenance technician or—a "Dogface Soldier" of the line.

The conclusion of the first eight weeks of basic training marks the point at which the specialists and line soldiers go in slightly different directions. It is at this time, as soldiers who are to be

Quest for mobility in all climes of the world produced this Marsh Buggy which

carries 20. Does 6 knots in water, up to 30 mph in swamps and deep mire. 10' tires.

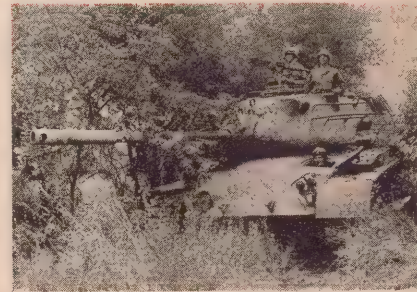




Review of West Point Corps of Cadets.



Engineering training at Camp Buckner.



Armored training for 3rd Class cadets.

United States Military Academy

What is It? The United States Military Academy is the senior service academy. Its student body is designated the United States Corps of Cadets. Its purpose is to provide trained career officers for the United States Army.

Historical Background: Heavily fortified West Point first became important because of its tactical value during the Revolutionary War. It was nearly betrayed to the British by Benedict Arnold. General George Washington, a strong advocate of a national military school, recommended West Point as the site in a letter written two days before his death. The Academy opened its doors on July 4, 1802, with 10 cadets.

Under its fifth superintendent, Major Sylvanus Thayer, Corps of Engineers, the Academy came into its own as a leading educational institution. Thayer was on duty at West Point from 1817 to 1833. Many of his students distinguished themselves in the War with Mexico. Graduates U.S. Grant and Robert E. Lee were the principal commanders for North and South in the Civil War. Current authorized strength of the Corps of Cadets totals 2,496.

Location: West Point, N.Y. is situated in the Hudson Valley about 50 miles north of New York City, on the west bank of the Hudson River.

Primary Qualifications: An ancient Academy regulation states that a Cadet may have "no beard, no wife, no horse." There are more stringent entrance requirements today. To be eligible for enrollment the prospective cadet must be at least 17 (by July 1 of year of admission), must be able to pass the physical examination required for appointment as an Army officer, and must be a citizen of the United States.

Educational Qualifications: Most new cadets enter West Point directly from high school or prep school. Young men who have made good grades in mathematics and English can generally do well in competitive entrance examinations without cramming. Every candidate must submit a transcript of his complete educational record. Satisfactory grades in at least 15 units of credit are mandatory.

Entrance Examinations: Basically, every candidate must take a certain standard College Entrance Examination—but the specific tests depend upon a number of factors. For example, whether the candidate hopes to obtain admission via the competitive or non-competitive route; whether or not the candidate has completed any college studies. Information as to the particular College Board tests may be obtained from the Registrar, U.S. Military Academy, West Point, New York.

How to Apply: The first step is to submit a letter to your U.S. Senators and the U.S. Representatives. The congressmen from your home state are entitled to name four candidates for each vacancy that exists from his state. One is a "principal," the others are alternates. These nominations (accounting for 85% of the Corps), are entirely up to the congressmen. Some lawmakers hold preliminary competitive examinations to select nominees.

Appointments are also made by the President (who may nominate the sons of present, retired, or deceased members of the regular forces). Application for Presidential appointments is made by writing a letter with full particulars to the Adjutant General, Department of the Army, Washington 25, D.C., AATN: AGPB-M.

Forty cadetships are provided for the sons of members of the Armed Forces who were killed in action (or died as a result of war wounds) in World War I or II, or in Korea. Full details are available by writing to address above.

Another 40 openings are reserved for graduates of Honor Military and Honor Naval schools.

Sons of men who were awarded the Medal of Honor may be appointed upon their application provided that they meet all qualifications. Letters of application (no standard form necessary) should be submitted to The Adjutant General.

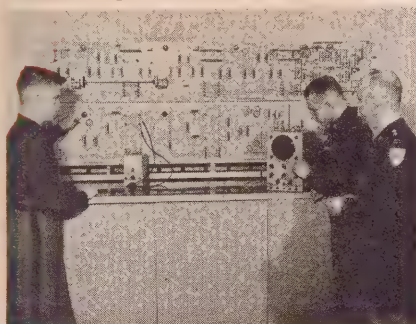
The 180 cadetships from the enlisted men of the Army take 90 from the Regular Army; 90 from the reserves (Army Reserve and National Guard). Applicants must have completed at least one year of duty. For Army men and reservists details are in Army Regulation 350-90-2.

Program of Instruction: Cadets receive 4 years of undergraduate instruction leading to the award of a degree of Bachelor of Science. All graduates, except foreign cadets and those unable to pass the final physical, are commissioned Second Lieutenants in the United States Army.

Pay and Allowances: No cadet pays tuition or any other charges. As a member of the regular army establishment he receives \$111.15 a month; out of this he pays for uniforms, text books, and personal effects. Each cadet also receives a ration allowance which covers cost of meals.

NOTE: Following publications may be obtained by writing to The Registrar, U.S. Military Academy, West Point, New York: Catalogue of the U.S. Military Academy, 1956-57; Building Leaders—The Story of West Point.

Students get radio-electronics subjects.



Mascot mules "Hannibal," "Pancho."

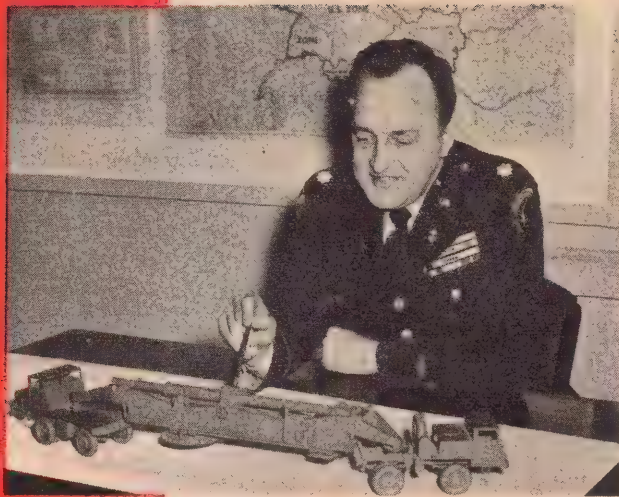


Math and more math is order of the day.



They Made ARMY Their Career

Outstanding soldiers stationed around the world are examples of the many who have chosen the U.S. Army as a lifetime career . . . note varied background, service



He Supplies the Ammo

■ Weapons are useless without ammunition, and it's the responsibility of U.S. Army Ordnance to insure that the Army's weapons are ready for use—meaning good ammunition is on hand. To Lt. Col. Woodrow J. Till, a career officer with U.S. Army, Europe (USAREUR) Ordnance Division, ammunition means everything. He is Chief of the Ammunition Branch for Army Ordnance in Europe. From his hometown of Cloquet, Minn., Colonel Till started his Army career as an enlisted man, passed from Officers' Training into Pacific campaigns. Since World War II he has served with Ordnance in the United States, Japan, Korea and Germany.



Captain Tackles Ticklish Work

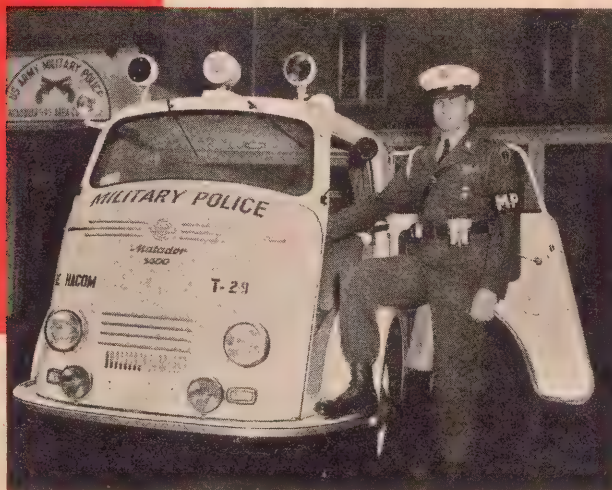
■ Capt. John L. Chandler commands the Explosive Disposal Team, Ordnance Division, Pacific Army Headquarters at Fort Shafter, Hawaii. A former Cavalry enlisted man, he entered the field of explosives disposal in 1940, and served with distinction in the Far East. He was commissioned in Korea in 1950. His work is exciting, dangerous, and he likes the extra pay involved in this field. Part of his work is instructing Civil Defense Groups in Explosives Reconnaissance procedures and telling thousands of school-age children about the dangers of playing with explosives. He wears the Soldiers Medal, Good Conduct Medal, eight Campaign Ribbons, other awards.

Retirement Features Appeal

■ "I like the early retirement features of Army service," said Sgt. 1st Cl. Gaylord E. Schultz as he filed away Military Police reports at U.S. Army, Europe, Headquarters Area Command. "That's only one reason for my deciding to make a career out of the Army." The ten-year veteran, Operations Sergeant for "A" Company of the 382nd Military Police Battalion which operates out of Mannheim, Germany, was discussing his Army career that has brought him to three overseas areas—Korea, Austria and Germany. "I also like the good pay, and the idea that Army service is a contribution which pays off in many ways as well as the feeling of security . . ."

What an Assignment!

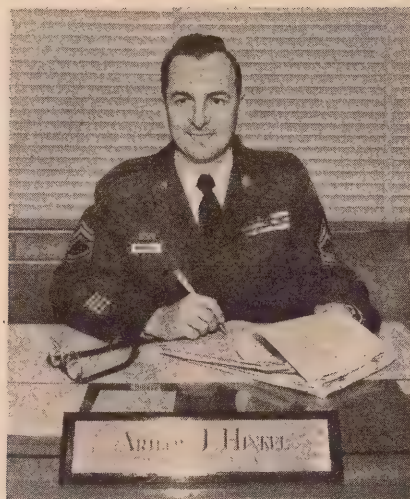
■ Enforcement of regulations and preservation of wildlife within a 500-mile radius of Fort Richardson, near Anchorage, Alaska, combine to make one of the most interesting jobs in the Army, according to Sgt. Frank T. Nysewander, Provost Marshal's Office, United States Army, Alaska. Sgt. Nysewander says, "Alaska is a hunter's and fisherman's paradise. I like to do both, so the Army sure assigned me to the right job." With 10 years' Army experience now behind him, he intends to make the service a career. His reasons: "A soldier is sure of a monthly pay check, retirement benefits, dependents benefits, and plenty of travel. My family likes it, too," he added.





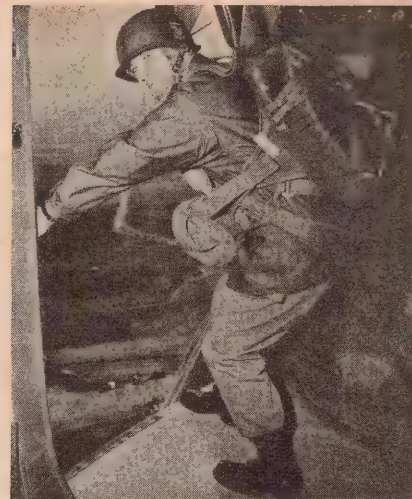
From Cook to Trick Chief

■ Responsibility for supervising teletype messages sent and received daily by the General Communications Center of Headquarters Army Forces, Far East and Eighth U. S. Army (Rear), goes to Sgt. John T. Crane of Paterson, N. J. This 23-year-old veteran of the Korean War directs the work of 13 teletype operators during his 8 hours each day as "trick chief." Enlisting in the Regular Army in November 1950, Sgt. Crane took eight weeks of basic training and 12 weeks of cooks' school at Fort Dix, N. J. From there he was sent to Fort Belvoir, Va., to complete a course in combat engineering. In June 1955, Sgt. Crane was re-assigned to his present job.



GI's Personnel Expert

■ Sgt. Arthur J. Hinkel, a studious-looking, 36-year-old soldier, controls the assignment of over 100 people each month. As Chief Enlisted Personnel Assignment Clerk of the Adjutant General's Office, Headquarters Army Forces, Far East and Eighth U. S. Army (Rear), Sgt. Hinkel also monitors the assignment of scientific, professional, lingual and intelligence personnel in Korea and Japan. He enlisted in the Regular Army in October 1940, after serving with the Wisconsin National Guard. He spent the major part of World War II as a warrant officer with the Allied Forces Headquarters in Europe. Sgt. Hinkel attended the University of Wisconsin.



Heavily Decorated Jumper

■ Brig. Gen. Edwin A. Walker, Commanding General of the 25th Infantry Division Artillery at Schofield Barracks, became a soldier in his family's tradition of service to the Nation. He was graduated from the United States Military Academy in 1931. During World War II he commanded the 3rd Regiment of the First Special Service Force in the Kiska, Alaska, invasion. He later headed the First Special Service Force in European campaigns. In Korea he commanded the Second Infantry Division Artillery and the Seventh Infantry Regiment. Gen. Walker's decorations include the Silver Star, Bronze Star with Cluster, Legion of Merit with Cluster, plus others.

He Supplies the Essentials

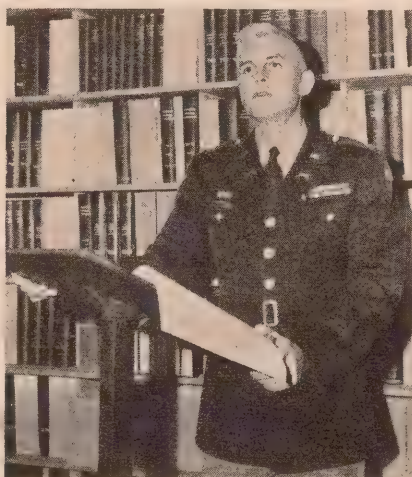
■ Brig. Gen. Aaron W. Beeman, as Quartermaster Officer for U.S. Army, Europe (USAREUR), must make certain the Army in Europe has more than enough food, gasoline and clothing for normal needs and for any emergency—and that the Air Force throughout Europe has the necessary fuel for its planes. With 16 years of Army service to his credit, he has served in Quartermaster assignments over half the world. "The Army to me and to everyone is a challenge," the General said. "It was always so, and that tough assignment always turns out to be one more challenge. Army service also is a mass of education packed into a few years."

Specially Trained by Army

■ Maj. James R. Moses of Seattle, Wash., an erect, greying Army officer, is Chief of the Confinement and Security Branch in the Provost Marshal's Office of Headquarters Army Forces, Far East and Eighth U. S. Army (Rear). This 34-year-old veteran of World War II received his first experience with the Army while serving from 1936-39 with the Washington State National Guard. In 1942 he joined the Regular Army—following a tradition begun by his father, who, at the age of 13, joined the Army and served as a drummer boy during the Spanish-American War. The Army sent Maj. Moses to Michigan State to study police science and administration.

Soldier and Engineer

■ Louis Francis Hamele had two ambitions as a boy; he wanted to be an engineer and he wanted to be a soldier. So when he enrolled at Ripon College in Wisconsin he majored in physics and math. Today he is a colonel, commanding an infantry regiment in Hawaii—the colorful 27th Infantry "Wolfhounds"—and finds his science background of inestimable value. Service in the Army at such widely separated points as the beaches of Normandy, Far East Command Headquarters in Tokyo and the Pentagon have given him ample opportunity to use the analytical procedures of science in attacking the problems of war. The youthful-looking officer is 41.



"Home-Bilt" Special for R/C'ers by H. McEntee

Mac-Junior

27.255 TRANSMITTER

■ Although "high-powered" transmitters are not a necessity on 27¼ mc., yet hundreds of Mac II and similar transmitters have been built; once used, the owners seldom part with them. Aside from the convenience of running entire transmitter from a single rechargeable 2 V. storage cell, the fact you can also use same cell for glow engine starting means one less item to carry on a flying session.

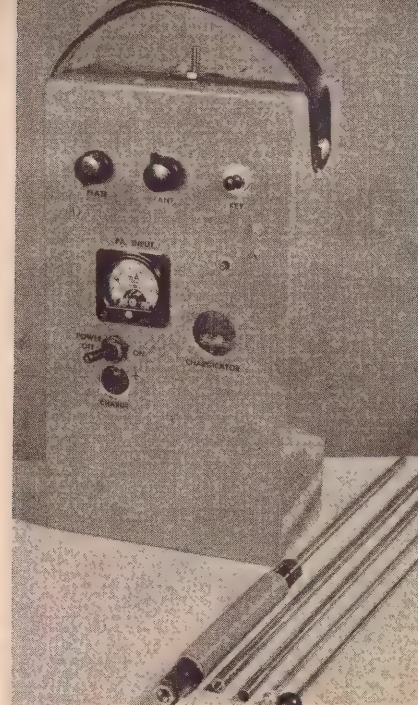
Admittedly, the Mac II is a large, heavy unit and lots of modelers consider a hand-held transmitter best. It occurred that a compromise unit might combine the advantages of both types—hence the "Mac Jr." Putting this much power into a carryable package led to problems, but the solutions result in a very practical transmitter.

First toughie was the power source. The widely available 2 V. cells used in Mac II and Mac 50 are bulky, but there are other surplus types that have plenty of capacity for the job. Willard's ERH-25-2 (sometimes labeled BB-210-U) and ER-25-6 occasionally can be had in the surplus markets. Latter is 6 V. battery made up of three 2 V. cells cemented together; you saw these apart with a hacksaw as we did to get the cell used here. These cells have the invaluable "three ball hydrometer," to show state of charge. This particular size of cell can be had brand new; if you can't locate

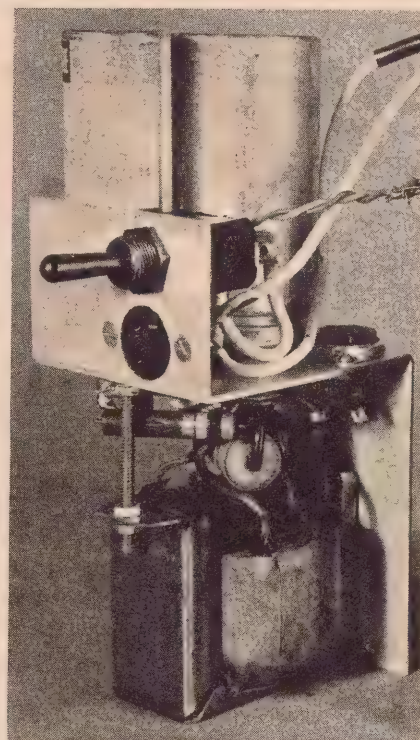
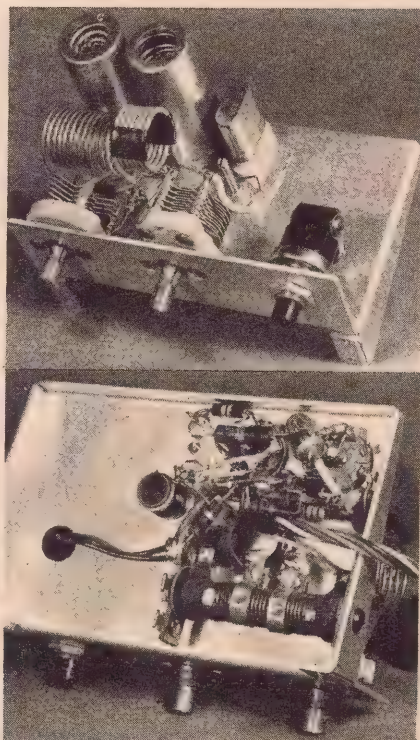
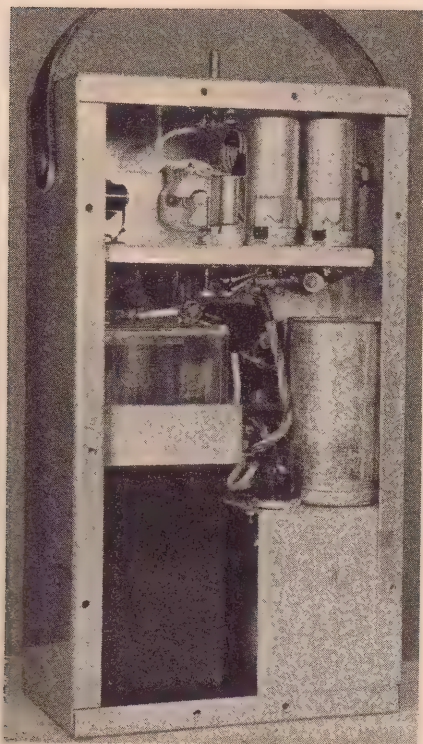
the surplus cells in parts list, procure the new one—called "Radio 25-2." Surplus cells and batteries come dry, are filled with electrolyte (use solution of 1280 Sp. Gravity, so hydrometer will indicate correctly). Newly-made cell is shipped filled; it costs considerably more.

Other power supply parts from R/C supply concerns pose no problems. Since cell used has slightly lower capacity than one in Mac II, we used a large value "filter resistor" at R7 to hold voltage down and reduce power drain. No effort was made to run transmitter at top possible input, although V2 will handle full 5 watts F.C.C. allows. It is actually run at about 3 W.; battery will supply power for at least 3 hours of use. There is plenty of capacity for glow engine starting too, plugging in at SO.2.

A hand-held transmitter poses difficulties that do not come up in unit meant to sit on the ground. It all revolves around "loading"—the arrangements made to get power out of transmitter and into the air. Most 27¼ mc. outfits that sit on the ground use ¼-wave antenna about 9½' long. To work right, it must be well "coupled" to ground, a requirement normally satisfied by natural capacity between the case and the ground. A hand-held job doesn't have this capacity; true, you are holding it in your hands, but you are a very



low grade "ground." A half-wave antenna does not depend on the ground for proper radiation, but you would need an antenna about 19' long to do the job! And for convenience in operation, antennas on hand-held transmitters are kept to 5' length or less. Answer is to use a loading coil to make up missing length of antenna; our total length is about 5', but Field Strength Meter checks show power put into the air is very high. We were able to balance entire antenna system (which includes L3, C6 and C7, and antenna itself) so loading on V2 stays almost the same, regardless of whether you place transmitter on ground or wooden table, or hold it in your hands! Thus, once C5 and C6 are tuned, they seldom will have to be touched again; you are assured V2 is always working at proper load.



Because of variable loading on output tube, we use an MOPA circuit; this means crystal oscillator V1 is isolated from whatever happens in output circuit. For V2 we chose 3B4; due to internal construction it is less apt than 3A4 or 3D6 to self-oscillate—that is, to work on some other frequency than that supplied by V1. It was found feasible to use V2 without neutralization even though both V1 and V2 are on the same frequency. The 3B4 is an extremely efficient tube, so V1 is run at low power; final tube of an MOPA (Master Oscillator-Power Amplifier) runs at higher efficiency than the usual power oscillator coupled directly to antenna, so power “wasted” in V1—in the sense that it doesn’t contribute directly to actual juice in antenna—is more than made up and you get more RF into air than if only one tube had been used.

Now what about construction? The storage cell is about $2\frac{1}{2}$ " square, so we selected a standard 3" deep aluminum radio chassis to hold equipment. Cell is clamped in lower corner, with hydrometer bells toward front, where they can be seen through hole cut in “front panel.” Power supply parts are mounted on Z-shaped piece of aluminum placed low to keep the CG down. All RF parts are on another chassis near top of case; while no attempt was made to use smallest possible parts, transmitter takes up only about 60% of chassis. Remainder might be used for proportional pulser or a modulator. There is even room on power supply chassis for another tube if desired. We wanted to fit a plate current meter—it had to be a small one; $1\frac{1}{2}$ " dia. unit listed is ideal for purpose.

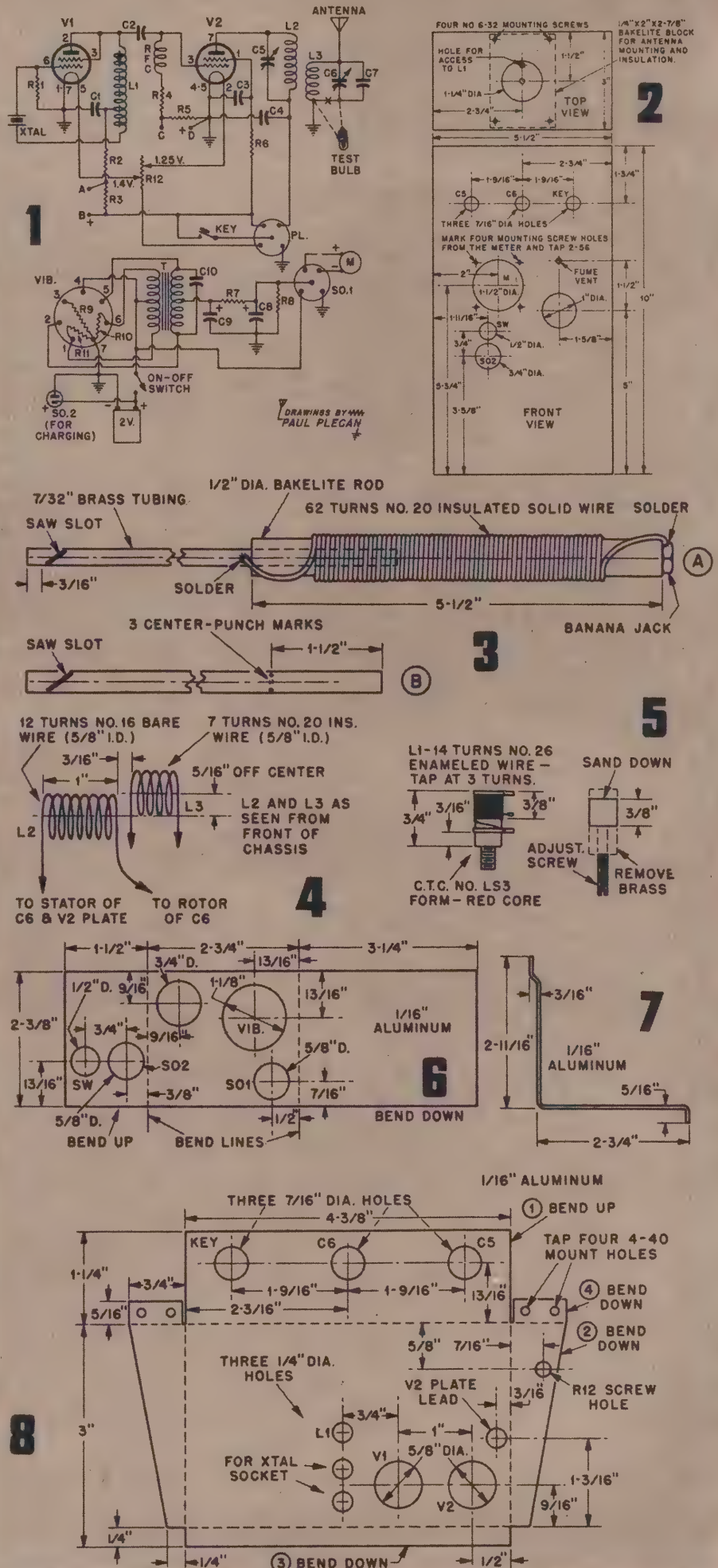
Cell is protected by lining case where it rests with $\frac{1}{8}$ " thick foam rubber; same material also cemented inside aluminum clamp. Fumes from cell are led out hole in front of case via plastic tubing attached to vent tube.

To simplify drawings, only main holes are indicated. Others, such as those for fastening sockets, power transformer (one tab bent down on this unit is attached to rear vertical portion of chassis) and two variable condensers may be marked off from actual units. Power supply is held in place by On-Off switch and by single screw into lower rear face. Holes in case for battery clamp should be marked with battery in place, so it can be held snug, without play.

Heavy flexible wire should be used for all connections in between cell, S02, vibrator, T and SW. Leads from RF chassis terminate in 5 prong plug, which goes in socket on power chassis. All small parts in latter are supported by their pigtaills, but lug strips are used for some parts in R/F unit. Note that form for L1 is cut down from size you get; also core is sanded shorter and brass slug must be removed from adjustment screw as per drawing 5. A spring of $1/32$ " music wire slipped under nut which holds this coil form bears against screw to keep it from moving after adjustment. Be sure to use shields on both tubes. C5 is mounted with fixed plates downward, while C6 has them up. Ground connections from C4 and C6 run to soldering lug held under one screw for V1 socket.

For a trial (made with the two chassis out of case) pull vibrator from its socket
(Continued on page 59)

Mac-Junior diagrams are as follows: #1—circuit; #2—case; #3—antenna loading coil; #4—coils L2 and L3 as seen from front of chassis; #5—coil L1; #6—top view of power chassis; #7—side view of battery clamp; #8—transmitter chassis, top view.



Walt Pyron's

Black Hawk

STUNTER

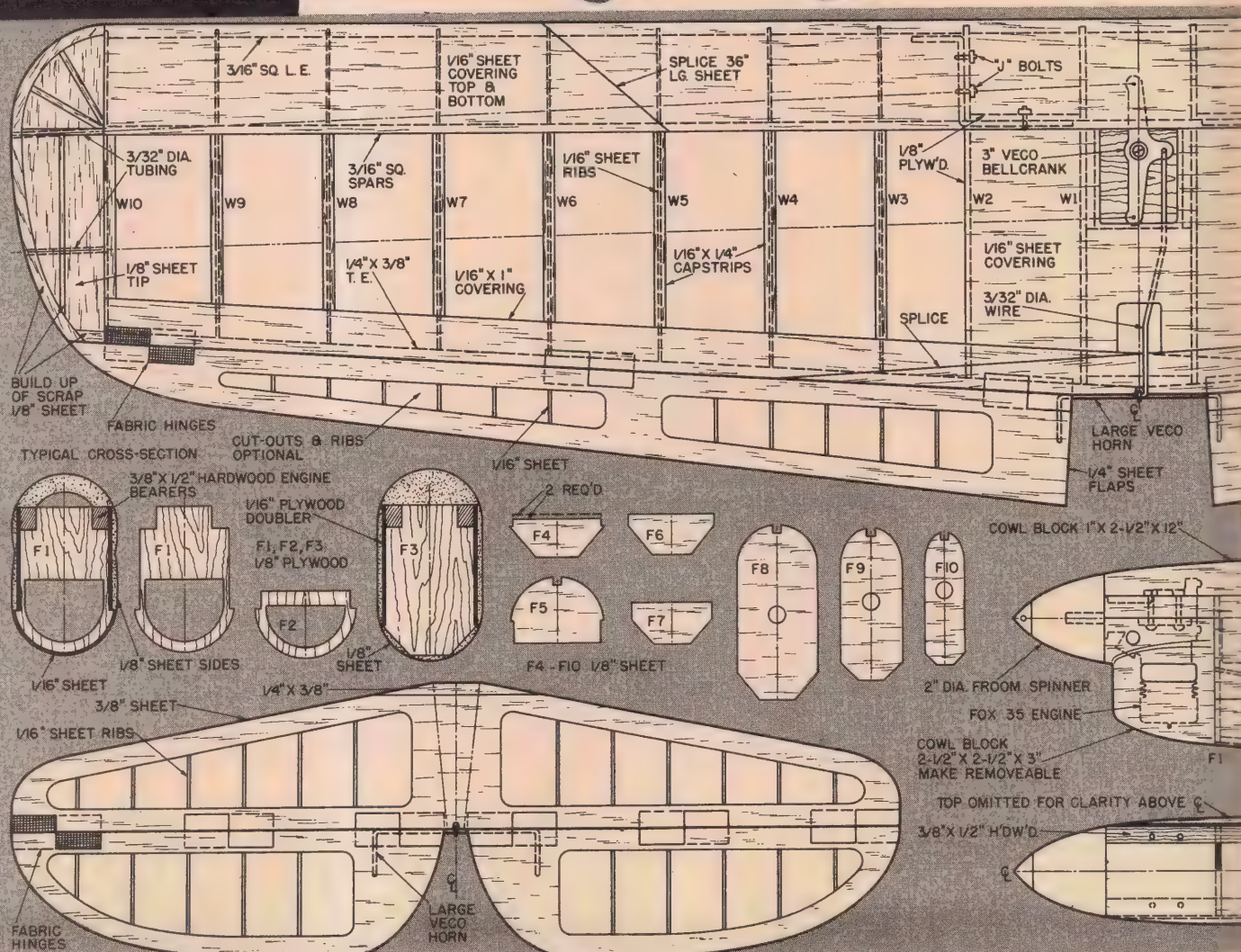
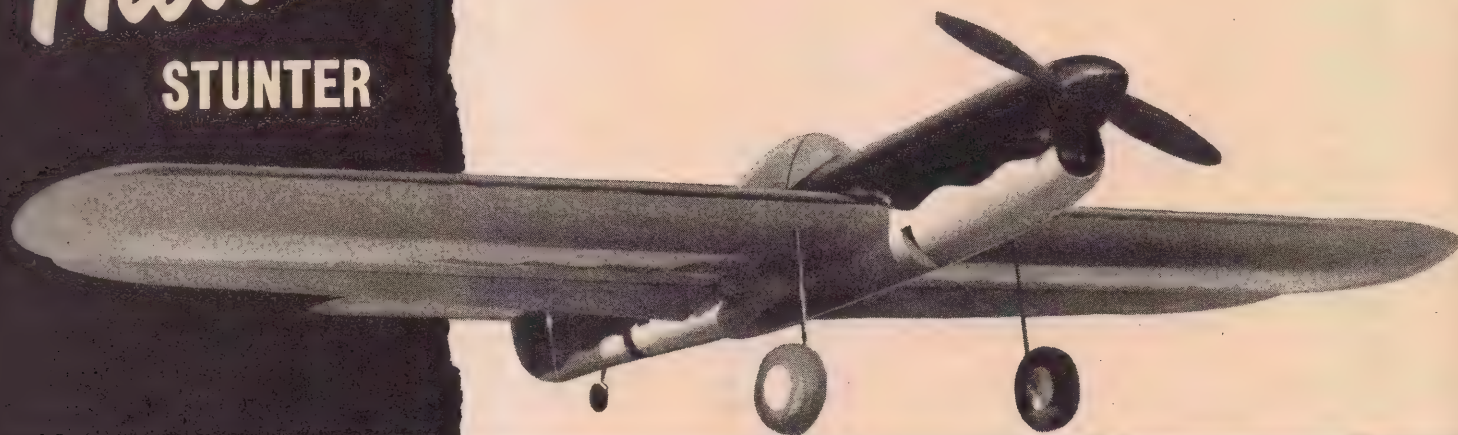
■ When I started out to design the "Black Hawk" my main object was to attain the maximum in scale appearance. Tapered wings, scale air outlets, landing gears located in correct scale position, and large flaps are all distinctive features which give the plane its unusual appearance. The flaps provide the excellent turning ability, especially in square maneuvers, which this model does with amazing smoothness and ease.

The "Black Hawk" is built up like the average stunt model. However, its performance ability is well above average. It has taken first-place honors at the last two Southeastern model airplane championships in Atlanta, and won similar first-place recognition at Spartanburg

and Birmingham meets. Top appearance points have been awarded in all competition thus far entered.

Start fuselage construction by gluing the 1/16" plywood doublers to the 1/8" sheet balsa sides. Motor mounts are then glued into place along with F-1, F-2, and F-3. Glue the sides together at the rear with spacer in place. When dry glue the remaining formers in place. Mount tank and sheet bottom of fuselage. Glue tail-wheel and scrap block behind F-10.

Wing ribs are made by sandwiching sheet balsa blanks between rib patterns W-1 and W-10 and bolting together. Rib patterns can be made of aluminum or plywood. Although this may seem a bit difficult it is easier than the task of



cutting out ribs separately. Glue ribs to spars and leading edge, noting positions of splices. When dry glue trailing edge spar to rear of ribs. Glue bellcrank to $\frac{1}{4}$ " plywood mount and sheet all of the wing as shown on plans except bottom of leading edge planking. Bolt inboard gear to W-2 and the $\frac{1}{8}$ " plywood brace. Plank the bottom of the leading edge on inboard side to splice position. Place flap horn in fuselage and slide wing into place. Plank the remainder of the wing and add wing tips.

Rudder, elevators, and stabilizer are made from $\frac{3}{8}$ " sheet balsa. Carve them to airfoil shape and add $\frac{1}{16}$ " sheet ribs. Do the same with the $\frac{1}{4}$ " wing flaps. Install controls, both elevators and flaps being hinged with Nylon fabric. Glue scrap block over stabilizer and add rubber. Plank top of fuselage with $\frac{1}{16}$ " sheet and add front block. Note: mounting-bolt nuts are soldered to tin plates. Front is then sanded to fit around a 2" Froom spinner. Temporarily install engine and carve motor cowl from balsa block.

For the finish give the model two coats of clear Aero Gloss and sand smooth.

Now cover the entire ship with medium Silkspar. Brush on four or five coats of clear and sand again with 400 wet or dry sandpaper. For sanding sealer apply five coats of clear with 50% talcum powder added. Sand smooth after each coat. Seal this with four coats of clear. For the final finish the top is black and the bottom Cessna gray; spray or brush five thin coats of this on and when dry rub down with Martin-Senour rubbing compound. Trim model in red.

Canopy is molded from $\frac{1}{16}$ " acetate or Plexiglas. This is done easily by carving a block the shape of the canopy, and cutting a hole the shape of the base of the block into a piece of $\frac{1}{4}$ " plywood. Tack the Plexiglas to the plywood and heat in an oven at 400-degrees temperature for five minutes. Press the shaped block into the heated Plexiglas until flush. Allow to cool, trim, and glue into position. Or use Berkeley P-51 canopy.

For flying use any good .29 or .35 engine; in the original model I used a Fox .35, with Testor's 39 fuel and a 10/6 Tornado prop. The best length for lines is from 60 to 65 feet.

Before trying test hop, make sure the



Wheels well forward of CG aids landings.

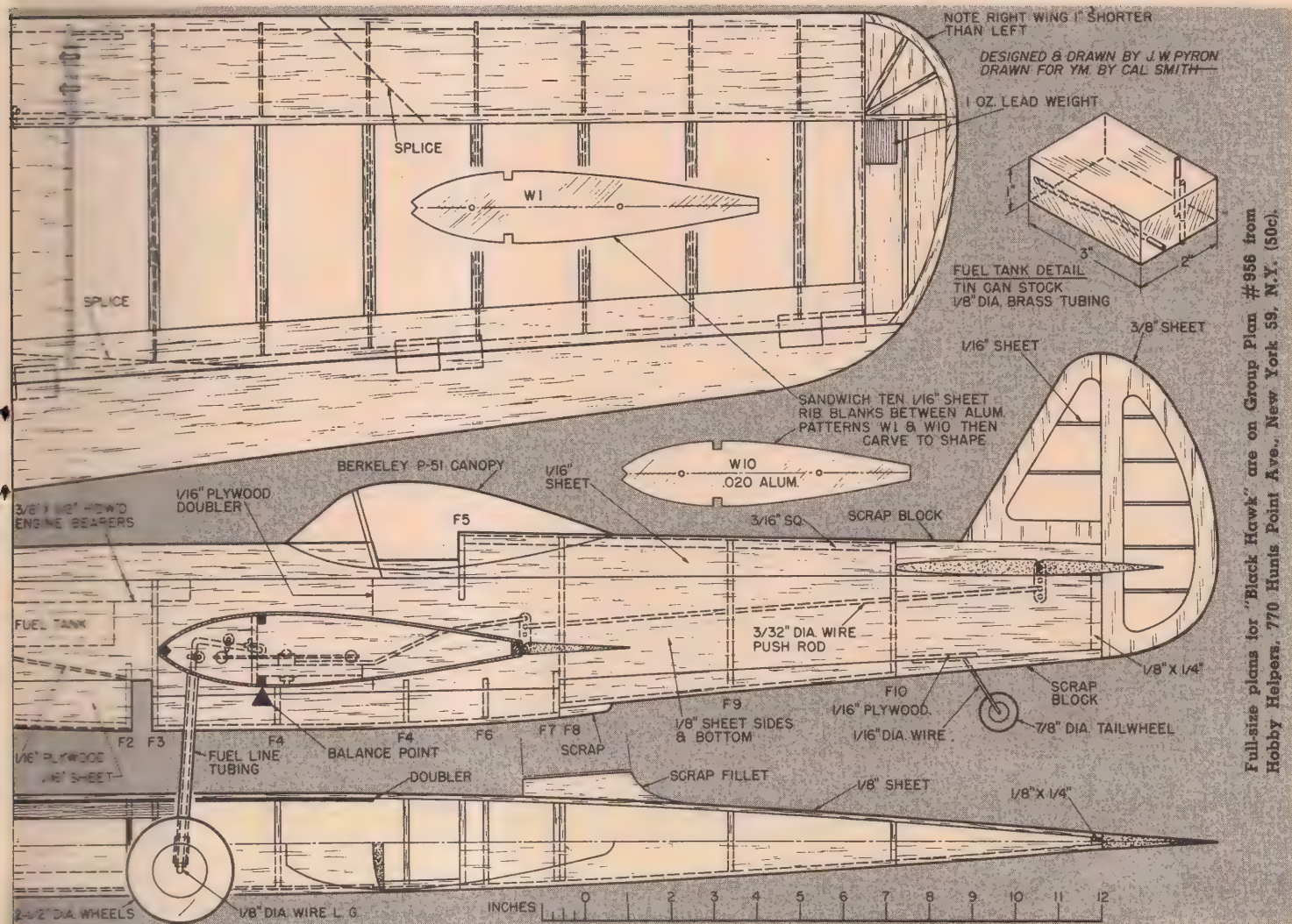
model balances correctly and motor is running smoothly.

BILL OF MATERIALS

5 pieces $\frac{1}{8}$ x 3 x 36" (balsa), fuselage, wing tips, planking, formers 10 pieces $\frac{1}{16}$ x 3 x 36", ribs, wings, fuselage, planking, cap strips. 2 pieces $\frac{3}{8}$ x 3 x 36", rudder, stabilizer, elevators. 1 piece $\frac{1}{4}$ x 4 x 36", flaps. 2 pieces $\frac{1}{4}$ x $\frac{3}{8}$ x 36", T.E. spar. 5 pieces $\frac{3}{16}$ x $\frac{3}{16}$ x 36", L.E. and wing spars. 2 pieces 12 x 6 x $\frac{1}{16}$ plywood doublers. 1 piece $\frac{1}{8}$ x 6 x 12", plywood formers for F-1, F-2, F-3, W-2, wing ribs, bellcrank mount. 1 piece $\frac{3}{8}$ x $\frac{1}{2}$ x 15", motor mount material. 1 piece 1 x 3 x 36", front block and cowl. Scrap blocks as required.

$\frac{3}{32}$ piano wire for pushrods. $\frac{1}{8}$ " piano wire landing gear. $\frac{1}{16}$ " piano wire tailwheel strut. 6 J bolts, landing gear attachments. 1 large Veco bellcrank. 2 large Veco elevator horns. 1 2" Froom spinner. 1 pr. 2 $\frac{1}{2}$ " Banner wheels. 1 $\frac{1}{8}$ " Veco tailwheel. Nylon cloth for hinges. Flexible leadout cable. $\frac{3}{32}$ " brass tubing for leadout guides. 1 box Mennen talcum powder for sanding sealer. $\frac{1}{16}$ acetate or Plexiglas or Berkeley P-51 canopy. AeroGloss as needed: Black, Cessna Gray, Stearman Red, Clear.

Capturing maximum appearance points, this plane took 10 first places and the Southeastern States' Senior Stunt Championship! Does AMA square pattern with ease.



Full-size plans for "Black Hawk" are on Group Plan #956 from Hobby Helpers, 770 Hunts Point Ave., New York 59, N.Y. (50c).

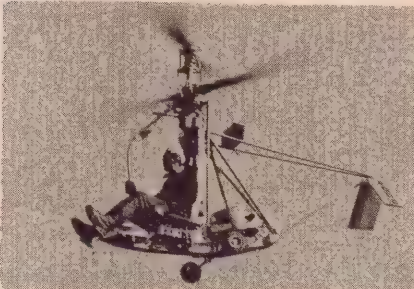
AIR-PIX ROUNDUP:

Those Fabulous Mini- Copters

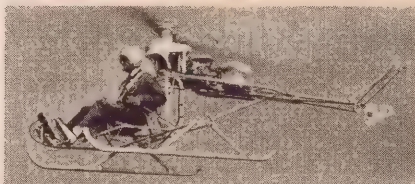
PHOTOS and TEXT
By HOWARD LEVY



■ **BENSEN "GYRO-GLIDER"** helicopter-glider developed by Igor Bensen, one of smallest aircraft in world. 29' rotor; weighs 86 lbs. empty. Operating principle similar to Fa-330. "Gyro-Glider" is towed by auto until it becomes airborne; will stay aloft as long as in tow, or there is sufficient wind to keep rotor blades turning. Take-off speed about 20 mph, landing speed 7 mph, lifting power more than four times own wt. Flew March '54; since then over 300 kits for "homebuilders" and 17,000 sets of plans sold. Water-operating model available known as "Hydro-Glider." Fitted with floats and of all-aluminum construction, craft is towed by motorboat.



■ **GYRODYNE ROTORCYCLE XRON-1** designed, built, test flown in less than year on Navy BuAer contract. Used for observation, liaison, small tactical maneuvers. Requires little time for training, easy to maintain, costs little to produce. Folds into small package for easy transportation. Power for coaxial counter-rotating rotor system provided at present by single Nelson 40 engine; 75 hp McCulloch engine to be installed. Rotor system typically Gyrodyne's, developed on larger Model 2C coaxial 'copter. Weighs less than 500 lbs. Thirty designs submitted by 18 manufacturers were considered by Navy; only Gyrodyne and Hiller received contracts for this type craft. Gyrodyne intends to have XRON-1 certificated for commercial sale. (Gyrodyne Co. of America, Flowerfield, L. I., N. Y.)



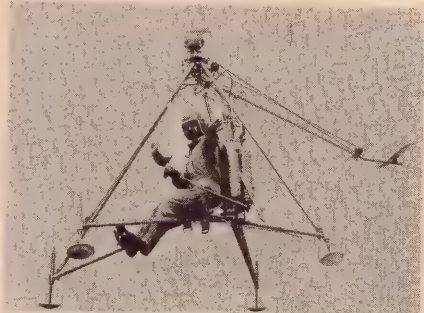
■ **GOODYEAR 400R "GIZMO"** 1-man courier-liaison or tactical vehicle. Initial powerplant was water-cooled two-cycle outboard Johnson engine developing 33 hp; now with 4 cyl "Mercury" outboard developing 43 hp. Power supplied to rotors through belt, pulley system. Gross wt slightly more than 400 lbs, top speed 60 knots. Capable of hovering, pattern flight, steep turns, high speed, forward flight, rolling pullouts. Est. service ceiling 12,000'; empty wt 245 lbs; endurance 45 min on 3 1/5 gals of gas; top speed 70 mph, cruising speed 55 mph. Folds into 21"x22"x152" box.



■ **KAMOV K-17 "VERTOLET"** single-seater ultra-light Russian design appeared in 1948. 20 hp Aubier-Dunne motorcycle engine, 3-blade coaxial rotor system. Twin floatation gear makes it amphibious; single tail. Designer is N. I. Kamov.



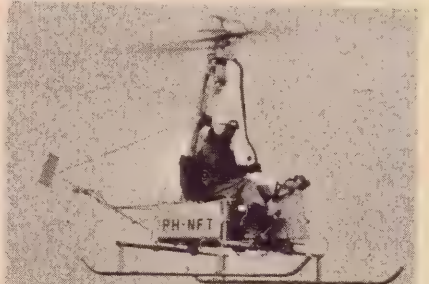
■ **KELLETT KH-15 "STABLE MABEL"** 1-man rocket-powered helicopter, designed and built by Kellett under sponsorship of Office of Naval Research to investigate new type of stable control system in small helicopter. Has been flown "hands off." Rocket engines located in rotor tips; fuel is hydrogen peroxide carried in two large round tanks. Flew in early '54. (Kellett Aircraft, Phila. International Airport, Phila., Pa.)



■ **ROTOR-CRAFT RH-1 "PINWHEEL"** early configuration with four-point landing gear. At speeds above 25 mph, pilot can make left or right turn by extending hand in direction desired, à la auto signal.



■ **HILLER "FLYING PLATFORM"** stand-on type developed by Hiller under Office of Naval Research contract. Directional control accomplished by leaning in direction pilot desires to go. Craft utilizes principle of lift and propulsion called ducted fan. Small dia. rotor under platform completely enclosed or "ducted." Fine tactical vehicle; can be transported with ease fully assembled. Under development since '47; first such VTO type to achieve piloted free flight.



■ **NEDERLANDSE Helicopter Industrie H-2 "Kolibríe"** ramjet, first rotary wing craft of original design in Netherlands. One/two place utility craft; two rotor-tip ramjets of 55 hp each. Powerplants burn household kerosene, gasoline, or jet fuel. Cruising speed 62 mph, minimum power speed 37 mph. Gross wt 1320 lbs, empty wt 440 lbs. Rotor dia. 33 ft. Endurance 1/2 to 1-hour depending upon use as crop duster/sprayer or military liaison/observation. Production models designated H-3.



■ **NAGLER HELIGLIDER** 1-man strap-on helicopter-autogyro proposal. Wt about 65 lbs; craft would lift man up rapidly at 2,700 ft/min rate, carry him five mi. Power for rapid climb supplied by 6 rockets arranged radially about hub of rotor. Each about size of milk bottle, fired in pairs, one for each blade, into manifold. Rocket blasts through interior of rotor blade, exhausts from supersonic nozzle. Rockets deliver about 20 lbs thrust each for duration of 20 sec. Fuel is solid propellant combination. After rockets expended and altitude reached, craft would go into autorotation, descend slowly. Folded, carried easily, would cost little, be expendable. Tilting of rotor disc would provide control. Repowering requires only removal of spent rockets, installation of new ones.



CAPITAL C-1 "HOPPI-COPTER" further development of Pentecost co-axial "Hoppi-Copter." C-1 powered by two tip-mounted Naval Research Laboratory pulse-jets, 23 lbs thrust each, intended as light personal one-seater. Completed in late '53, undergone ground testing. Stands over 6', has 18' rotor dia. with 6' tread tricycle landing gear. Empty wt, 130 lbs, normal gross wt, 450 lbs. Design top speed, 90 mph; cruising speed, 60 mph; max rate of climb 800 ft/min; best climb is 40 mph; max ceiling 10,000'; endurance 1½ hrs. Est. cost \$1300-\$1500 in quantities of 1000. (Capital Helicopter Corp., P.O. Box 1023, Schenectady, N. Y.)



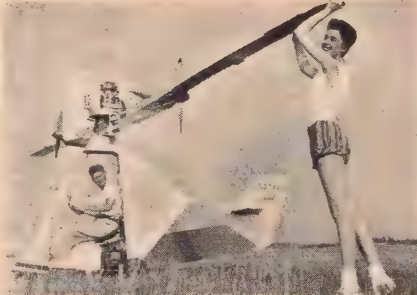
FA 330 by Focke-Achgelis produced by Weser Flugzeugwerke of Delmenhorst, Germany. 3-bladed, single-place, auto-gyro glider normally flown as kite, towed from submarine by cable winch; elevated observation increased sub's search view when cruising. Operators of Fa 330s were submariners taught to fly the craft in large French wind tunnel at Chalais-Meudon. 200 completed before end of war, but lost value, because they could be detected by radar. This captured one at Budd Air Force Field, Pa., 1945. Pilot, George Townson.



BENDIX HELICOPTERS MODEL K was single-seater, co-axial contra-rotating configuration with 2'4" spacing between rotors; according to number of test pilots, really first successful co-axial. Continental engine provided 92 hp. Rotor dia. 25'; overall length 25'; height, 9'6"; empty wt 954 lbs; gross wt 1250 lbs; cruising speed 70 mph; max. speed 96 mph; range 85 mi; service ceiling 8500'. Model K later used as flying test bed for 5-place Model J; further testing of both craft taken over by Helicopters Inc., with rights later obtained by Gyrodyne Company of America. Model K turned over to NACA Langley Field for testing, then to Smithsonian. Flight made in June '46.



deLACKNER "AEROCYCLE" is military version of DH-4. Powered by 4 cyl, 2 cycle "Mercury" Mk. 55 outboard engine developing 43 hp. Prototype is re-engined "Heli-Vector;" Army has ordered 12 "Aerocycles" for evaluation. Production versions will weigh about 170 lbs, have larger dia. rotor blades, modified transmission, increased fuel capacity. Craft will lift 300' lb payload, fly at 65 mph, have 150 mi. range with hovering ceiling of over 10,000 with autorotation provided. Outtrigger arms fold alongside aligned rotorblades.



BENSEN B-4 "SKY SCOOTER" one-two place with pilot, passenger sitting on "buddy" type motorcycle seat, handlebar controls. Rotor lift and engine power controlled by twisting left handlebar, forward speed by pushing and pulling handlebars. Rudder pedals steer craft right, left. Rotor dia. 29 ft; empty wt 360 lbs; gross wt 740 lbs; cruising speed 60 mph; range 120 mi. 40 hp Nelson engine drives two small propellers mounted on rotor blades which supply pulling power for rotor. HEPARS Drive system (high efficiency propulsion and rotor system) by Bensen is key to simplified design, low cost . . . \$6800 per complete, or \$980-\$4500 for "do-it-yourself" addicts, depending upon amount of factory prefabrication. No word regarding ATC tests, no flight views released. (Bensen Aircraft Corp., Box 2725, Raleigh, N. C.)



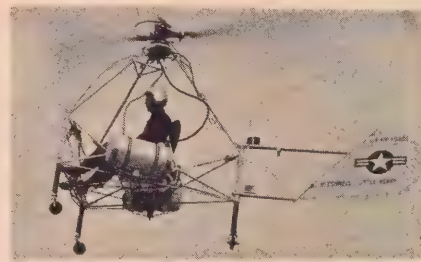
SCHMIDT PULSE-JET "PARA-COPTER" MODEL 2. Front-line evacuation craft; uses Schmidt-designed pulse-jet engines on tips of rotor blades. Such engines are usually noisy, but these have water injected into chamber which turns into steam in normal 1700 deg. heat, creating greater mass, deadening noise. Remaining noise then changed into higher-pitched, inaudible sound through use of 32 stainless steel tubes mounted in end of ejection chamber. Engines hinged so they are always in position regardless of blade-pitch changes. Each produces 105 lbs thrust. Craft folds into a small package. Height, 8'; rotor blade dia., 17'; est. speed, 132 mph; duration, 1 hr 10 min.



S.N.C.A. SUD OUEST SO-1220 "DJINN" 1-place powered by 250 hp Turbomeca "Palouste" compressor-turbine unit which actuates rotor by blowing "cold" air through rotor hub and hollow blades, without using combustion at rotor tips. In production for French military services and commercial operators in 1-place agricultural configurations; 2-place with enclosed cockpit, or single-place with two-outboard stretchers designated SO-1221. Pictured with 33 lb radio, pilot, and 132 lbs of useful load has range of 110 mi and 2 hr endurance. Rotor dia. is 33', max. wt for vertical take-off (SO-1221), 1455 lbs. Empty wt, 550 lbs. Speed, 75 mph, cruising, 62 mph. In December '53 "DJinn" set two records by reaching 15,711' altitude. To sell for about ½ price of other 2-3 place certificated helicopters on market. (S.N.C.A.S.O., 105 Ave, Raymond-Poincare, Pans 16e, France)



FAIREY "ULTRA LIGHT" small liaison-observation developed for British Army. Can be transported on standard 3-ton truck, removed manually by bars inserted through skid landing gear. 250 hp Blackburn-Turbomeca "Palouste" turbine feeds air to Fairey pressure jets at rotor blade tips. Rotor dia. 28' 3"; overall fuselage length 14' 8"; ht 7' 11"; width, 6' 3". Seats two, pilot forward, observer aft, giving 360 degree vision. Flew in Aug. '55. Two built. (Fairey Aviation Co., Hayes, Middlesex, Eng.)



McDONNELL J-1 "LITTLE HENRY" first ramjet helicopter. '48. For Air Force, intended to demonstrate three-dimensional aerial motor-cycle, consisted of 2-blade rotor, two tip ramjets, small rudder, open steel structure supporting pilot, fuel tanks, and control. Ramjet units, wt less than 10 lbs each, burned 80 octane gas. Weighed 285 lbs empty, carried additional load of 500 lbs. 5' wide, 7' high, 12½' long. Rotor blade 18½' from jet to jet. Two built, second having refinements such as automatic throttle on collective pitch arm, modified rudder. One in Smithsonian. Speeds of over 50 mph carrying pilot, passenger. USAF designation XH-20. (McDonnell Aircraft, St. Louis 3, Mo.)



deLACKNER "HELI-VECTOR" DH-4 stand-on. Roll and pitch accomplished by pilot shifting his wt forward and backward; right or left directional control by turning motorcycle type handlebars. Kiekhaefer "Mercury" outboard engine of 30 hp mounted on platform ahead of pilot provides power; transmission is dual vee belts with stable, automatic torque balancing unit, autorotation cam clutch. Fuel carried in upright column, throttle is conventional twist grip motorcycle unit. Counter-rotating rotor blades have a 15' dia.; prototype weighs 180 lbs. Est. top speed, 65 mph, normal range on 1 gal fuel 15 mi; hovering ceiling 5000'. Flew in Nov. '54. (deLackner Helicopters, Inc., 14 No. Bleeker St., Mt. Vernon, N. Y.)



KAMOV KA-10 "VERTOLET" is Russian development of earlier K-17; 50 hp Pobieda engine. Like earlier model fitted with floatation gear, but has twin tail. These ultra-lights used by Navy for observation operations from submarines. Maximum speed about 75 mph.

Mini-Copters



■ **HOPPI-COPTER "STRAP-ON"** by Horace Pentecost in '45 was first ultra-light, back-strap helicopter. Powered by 15-20 hp engine with 12' dia. co-axial rotor system; able to lift 200 lbs. About 25 test hops logged with safety cables for pilot in case of equipment failure before project shelved to make way for model with landing gear. Original "Strap-On" now in Smithsonian.



■ **HOPPI-COPTERS INC. MODEL 101, 102, 103, 104** followed Pentecost "Strap-on." Known as "Hoppi-Copters," these had seat and tri-cycle landing gear. Powerplants were 20 hp for Model 101, 35 hp for Model 102, and 40 hp for Models 103 and 104. First two had 16' and 16½' dia., latter two 17' dia. rotors. Model 104 built in '52 had gross wt of 450 lbs, cruised at 45 mph with range of 150 mi. Model 102 and 104 tested in England by British Ministry of Supply. Model 104 remained in England fitted with British light engine; no word received regarding testing by Hoppi-Copters Ltd. Although Horace Pentecost is no longer with Hoppi-Copters Inc., concern still exists and is supposedly designing new light copter.



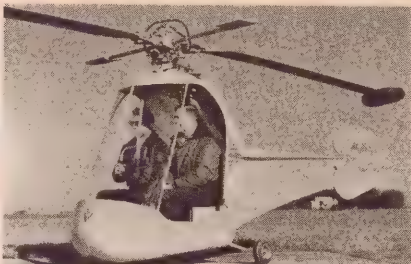
■ **BENSEN "MID-JET"** was tiny ramjet designed, built by Igor Bensen in late '53 for entry in Navy "Rotorcycle" competition. Weighed 100 lbs, reported capable of lifting 400 lb loads, fly at speeds up to 80 mph. Ramjets, wt 5 lbs each, developed 50 lbs thrust each. Rotor dia. was 15'. Easily taken apart, reassembled with hand tools. Because of simplified design and improved aluminum designed ramjet powerplants, price would run \$1000 per unit in quantity production.



■ **AMERICAN HELICOPTER XH-26 "JEEP"** was military development of XA-6 for Ordnance Branch of Army, flew in '52. Originally had twin vertical fin tail, but reworked and fitted with vee tail and small tail rotor. Can be parachuted in 5x5x14 ft container, put together, flown in 20 min. Powerplants are American Helicopter XAJ 7.5 in. pulse-jets developing 35 lbs thrust each, with only one moving part, which when worn may be replaced in few min. Top speed, 80 mph; cruising speed, 70 mph; empty wt, 300 lbs; gross wt 700 lbs; max gross wt 1040 lbs; rotor dia. 27'; ht, 6'. Can carry a single, or two in tandem, or side by side with twin external litters without modifications to basic airframe or powerplant. Company since absorbed by Fairchild Engine & Airplane Corp. Five ordered.



■ **AMERICAN HELICOPTER XA-6 "BUCK PRIVATE"** single-seater flown Feb. '51. Powerplants were company's own XAJ 6.7 in. pulse-jets developing 35 hp each, having combined wt of 32 lbs, burning either gasoline, kerosene or diesel fuel oil. Rotor dia., 27', length, 13' 6"; empty wt, 180 lbs; gross wt, 720 lbs; cruising speed, 60 mph; range 125 mi.



■ **HILLER "HORNET"** was company's first tip-powered ramjet helicopter, flown in '60. Two-place with fuselage of steel construction covered with laminated plastic, fiberglass. Tail rotor used for directional control was sloped to be affected by rotor downwash. Rotor dia. 23'; fuselage length 12' 8"; ht 6' 8"; empty wt 340 lbs; gross wt 900 lbs. Max speed, 80 mph; cruising speed 70 mph; rate of climb 1100 ft/min; ceiling 12,000'; range 50 mi; endurance 40 min. Hiller 8RJ ramjets weighed 11 lbs, produced 35 hp each. Originally intended to be marketed for under \$5000, but in '51 military commitments necessitated canceling commercial "Hornet." Three prototypes constructed, two stripped, one in completed configuration.



■ **BENSEN B-7M "GYRO-COPTER"** powered version of "Gyro" and "Hydro"-Giders developed by Igor Bensen. Powerplant is 4 cyl air-cooled Nelson engine of 40 hp. Cruising speed 60 mph; range 20 mi on 1 gal of auto gas; empty wt, 185 lbs; gross wt 435 lbs. \$1795 complete or plans at \$25 per set. Can be stored in garage, transported on tail-gate of station wagon or small boat trailer. Wrenches used for assembly or disassembly. Operating cost \$2-3 per hr. First flight Dec. '55. (Bensen Aircraft, Raleigh-Durham Airport, Raleigh, N. C.)



■ **ROTOR-CRAFT RH-1 "PINWHEEL"** 1-man, first rocket-powered 'copter. Research craft for Navy BuAer to investigate rocket power. Liquid hydrogen peroxide fuel; duration, 9 min. Flies at 60 mph. Needs no landing gear, uses pilot's legs for support, take-off, landing. Rocket motors located in rotor tips, first to be throttle-controlled. Rotor turns at about 500 rpm, take-off rpm is reached in 10 seconds. Craft is quiet, only hissing sound from rocket jet nozzles is heard. Rotor blades all-metal. Uses no electricity, has no oil system, hydraulic system, starter, transmissions, or generator; can be folded to fit into phone booth. Conventional helicopter controls, except steering is accomplished by turning cyclic pitch control handle. Commercial version could sell for \$1,200. Flown in '54. (Rotor-Craft Corp., 1850 Victory Blvd., Glendale 1, Calif.)



■ **NAGLER NH-120** designed as 1-man, collapsible-portable helicopter. Intended as torqueless, gearless, clutchless coaxial with simplicity of single rotor. Drone engine modified, placed between rotors as self-contained power package. 40 hp Nelson engine proved unsatisfactory; it was decided to enlarge the configuration which required engineering change. Craft retained as test bed for newer model. NH-120 could fold into 2½x7 ft container; had 7 ft dia. upper rotor; 20 ft dia lower rotor; overall length 8 ft; height 9 ft; empty weight 280 lbs; gross weight 750 lbs; top speed 80 mph; cruising speed 70 mph; rate of climb 1200 ft/min; endurance 3 hrs.



■ **NAGLER-ROLZ 54** powered by two 8 hp Argus engines, each weighing 9 lbs, located on rotor blades. First 1-man, portable. Weighing only 80 lbs, built and flown during WW II. Hitler placed engineering staff and factory at Nagler's disposal to develop this new kind of machine; four were built, flown before contract canceled. Endurance was 1 hour, range 30 mi, ceiling was 1,500'. Rate of climb was 500 fpm. Rotor dia. 26'. Flew in '41 in Austria.



■ **HILLER YHJ-1/YH-32/HOE-1** is military configuration based on "Hornet" ordered in June '52. Using more developed ramjet, the 8RJ2b which weighed 12.7 lbs and developed 45 hp, military craft also fitted with small tail rotor to give quicker, more positive directional control. Empty wt of redesigned military craft slightly more than 500 lbs. H-32 is Army's first operational ramjet copter, HOE-1 Navy's first tip-mounted jet copter. HJ-1 "Hiller-Hornet" first jet-powered aircraft of any type to receive CAA certification in U. S. (in '55). Limited undisclosed quantity of H-32/HOE-1s delivered for evaluation. Powerplants have no moving parts, may be changed quickly with screwdriver. (Hiller Helicopters, Inc., 1850 Willow Road, Palo Alto, Calif.)



■ **NAGLER NH-160** undergoing flight testing is unusual ultra-light coaxial rotor configuration with upper rotor 6 ft above lower. Production models will have high-speed lower rotor fully shrouded, enclosed cockpit and fuselage. Lower rotor is 3 bladed, upper a two blade. 72 hp McCulloch drone engine rotates. Upper rotor dia. 20 ft; lower rotor 7 ft; fuselage length 12 ft; overall width 6 ft; empty weight 420 lbs; gross weight 850 lbs. 120 mph. (Nagler Helicopter Co., Westchester County Airport, White Plains, N. Y.)



Young Men's World

Model building and hobby engineering reports from all over the world. Let's hear from all clubs and lone-wolf modelers, too

■ Really in the chips this month is modeler-photographer Bill Baughman of Los Angeles whose camera efforts lead off the "Model Boating" column and take top honors here, too (above). That shot of Al Wood's 4' scale motor yacht takes the \$25 prize for "Most Realistic Model." Below you see two other shots of this attractive radio-control craft.

Power is a custom water-cooled McCoy .19. Hull and all hardware made by Mr. Wood who does much modeling work for the Hollywood movie studios. As a result he is a stickler for detail and true scale—the latter is operational speed and maneuvering, too! Muffler was built into the exhaust line to give true sound to the model.

Hobby Items in the News. Sterling Models of Philadelphia which offers an extensive line of scale operating boats and planes took on the services of a sales representative who has quite a background in modeling and full scale aviation. T. L. "Tim" Skinner is fellow in question and although YM-Worlders have known him for a long while, it wasn't until Sterling's press release came that we found Tim was attached to the 8th Air Force in England during World War II. He flew 35 combat missions as pilot of B-17 Flying Fortress. His group was awarded 3 Presidential citations!

Sterling, incidentally, has 45,000 sq. ft. (a lot of area to fill with balsawood!) of floor area in its new plant.

If your club wants to embark on a money-raising project we suggest you look into X-acto's new Colonial antique reproduction kits. Six carefully authenticated pieces taken from New England museums and private homes have been selected by X-acto and made available in "do-it-yourself" kits. Wood parts are pre-cut, shaped and grooved. All you need

is a hammer; antiquing and finishing materials are supplied along with some very clear instructions.

There's a big demand for such items. Assembling and finishing them is a lead-pipe cinch for any modeler. The six kits make up into a 5-board foot stool (\$2.95); deacon's pipe box planter (\$3.95); candle box letter holder (\$4.95); 3-drawer wall shelf, \$7.95; and blacksmith's box magazine rack (\$8.95).

See 'em at your local hobby shop.

Wow: Rich's Hobbytowne in Parsippany has sold more than 1,000 of Jim Walker's Firebabys. After customer finishes model he comes back on a Saturday morning, then Rich Palmer & Staff teach him to fly on shop's private flying circle. Lotsa dealers could profit from this one.

Jetco Models is the new trademark for Christine and Albon Zaic's C. A. Zaic Co. (883 Lexington Ave., Brooklyn 21, N.Y.). Outfit has many new model kits underway such as PAA-Load, boats, scale control line and gliders. Also specializes in hard-to-get sizes of balsawood. In response to requests they now have large size trailing edge stock which is cut especially for radio control modelers.

Spirited bidding reported from mid-west on Junior Auction Television programs (beamed out from 6 stations). for Medley's Cheryl Ann tug boat kit. It's a sort of popularity contest with the Medley merchandise walking off with top honors.

How to Become a Trained Technician.

That's the title of two very informative articles run by this publications awhile back. They concern the 2-year technical schools of interest to any mechanically-minded young fellow who hasn't got the where-with-all to put in 4 or 5 years at an engineering college. Trained technicians are commanding handsome sal-

aries these days in almost every field.

We have a limited supply of reprints available; if you want one send along request with 3c stamp.

Some Words to the Wise. We've been shown a lot of correspondence that comes into the YM offices, a lot of it almost impossible to read. Here are a few suggestions. When writing the editors try to write distinctly. They're not too concerned about your "English," but they've got to be able to read it before they can understand it. If there's a typewriter available, use it.

Any manuscripts submitted should be typewritten and triple-spaced. Don't write or type on the back of photos. Print or type caption material on a separate sheet of paper and attach to bottom of photo with Scotch Tape.

Don't submit color photos or transparencies. Send black and white glossy photographs, preferably 5 x 7 or 8 x 10 inches.

If you're advising the editors of a coming contest or exhibition, let them know at least 90 days in advance of the event.

Tomorrow's Technicians and Engineers.

That's what the YM readers are going to be. That's why we carry new sub-heading, "The Magazine for Tomorrow's Technicians and Engineers" below title on front cover. More and more educators and industry leaders are recognizing modeling as the one hobby activity that attracts more of tomorrow's scientists, engineers and technicians than any other spare-time avocation. Hence the new descriptive cover slogan.

To point up this, here are some interesting statistics gleaned from a survey of YM readers. Seventy-three percent say they are going to college. Sixty-five per-



Hobby Club Emblems



Young Men's World

cent of these fellows intend to take some branch of engineering or technology. And more than thirty percent of those specified "aeronautical" or "aeronautical engineering"! That's almost 8,000 aeronautical engineers right there . . . so keep up your interest, men . . . the country needs you.

Why No Free Subscriptions? Many, many model contest prize committees write YM requesting free subscriptions to give away as awards. To them all the folks at the editorial offices must say, "Sorry, no can do." Maybe you'd like to know the reason for this. *Young Men* (like all of Street & Smith's monthly

publications) is a member of the "ABC," a business organization that audits magazine circulation figures and certifies that all subscriptions are bonafide and that none are given away. As a consequence YM'ers just can't hand out subscriptions as prizes.

When requests come in early enough in the year to get included in the annual "promotion" budget, sometimes other awards are available.

Hobby Clubs and Their Emblems. We have some live-wire outfits with us this issue. The Blue Mountain Buzz Bombs of Harrisburg, Pa., have more than 50 members. Plane flying is done at the Indiantown Gap Military Reservation. Contact man is Harry K. Shepler, 3715 N. 3rd St.

Castro Valley, Calif., Flying Clowns meet in a school every Friday night. Twelve active members concentrate on U-control. Ed Childress is president; he's at 19123 Vaughn Ave.

Since Calgary, Alberta, is the home of the famous "Stampede" every year, it's only natural the Calgary Model Airplane Club's emblem is a little on the "Western" side, John Bortnak, 1203 8th Ave., E. is the outfit's president.

Now how about your club? Have you sent in its emblem to try for the \$10 award we make each issue for each one presented?

Hobbies in Action. Combat flyer Nicholas Potuk is responsible for our H-I-A \$25 prize winner this issue. Nick shot that carrier entry at the Mirror Model Flying Fair, Floyd Bennett Field, N. Y.

My Favorite Model. In 15 years of modeling, Leonard Opdycke of Milton, Mass., reports that his 40" span free flight model of the Supermarine "Walrus" is his favorite. Power is an O&R ignition .19. For extra strength, construction is all in one piece (nothing removable). Only concession to flying needs is an enlarged elevator. Engine and coil are mounted in nacelle; battery case is "forward and below." Engine, driving 10" prop, was reversed by rotating timer assembly 60 degrees.

Says Len: "Balance is perfect and stability is exceptional with center of gravity and center of lateral area both low. Flight is slow and very steady—take-off and landing highly realistic. I am planning to substitute a glow engine (with weights to replace the equipment) to avoid problem of seawater and wiring.

"This kind of model to me represents free flight at its best."

MY FAVORITE MODEL



We agree, L.O.; to prove it the \$25 "favorite model" award is on its way to you.

140 Mile Distance Soarer. Idea was to see how far elementary models could travel; a dozen were built, on each wing was a typed slip asking for notification should any be picked up at a distance from the launching site.

Gliders were first set for circling flights, but when launched from a slope up which a fair breeze was blowing, they turned and plowed into hill above launching spot. Needed was a means for making them travel flat and fast to a considerable distance from the hill side, then changing the balance for real thermal-sniffing flight, with rudder turning to keep them in thermals. Result was achieved by simple gadgetry.

All surfaces are flat section, with rounded edges. Angular difference between wing and stab attained by beveling underside of main stick so that leading edge of stab is $3/32"$ lower than trailing edge. Rudder is given light coat of cement on one side to force it into turn position when cement dries. Cement applied only on rear portion. No dope used on any part of gliders; they were sanded smooth all over.

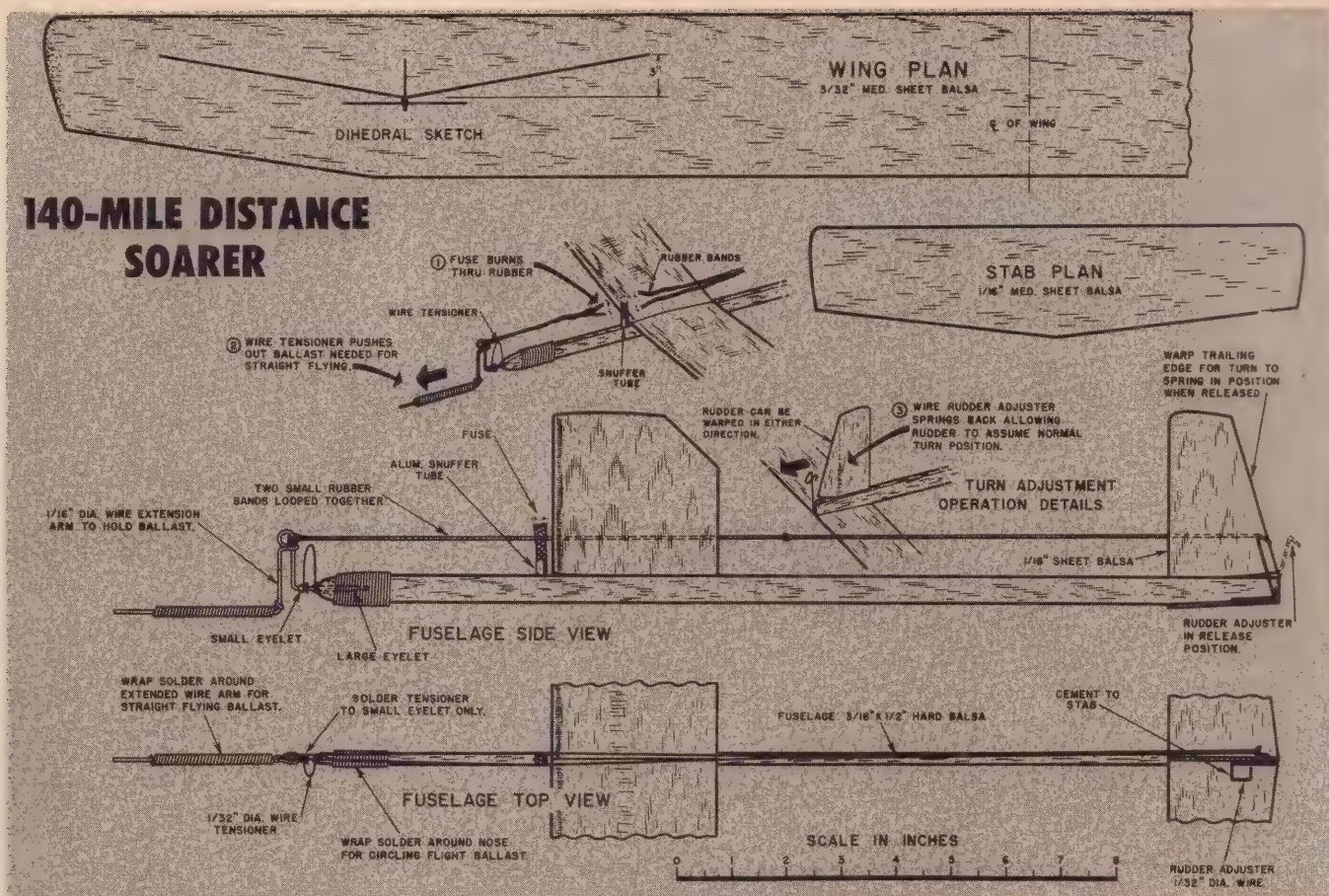
Before adjusting for final balance, add rudder adjuster, aluminum snuffer tube and eyelet for droppable nose weight. Then give glider a few glide trials, changing solder or wire weight at front until you get a floating glide, with a turn of 50-100' diameter.

Droppable weight is single piece of $1/16"$ wire, which should rather sloppily fit eyelet cemented into fuselage; $1/32"$ music wire spring attached to the wire kicks latter out, away from glider, when fuse burns rubber band. At same time, rudder adjuster, set to hold rudder in center for straight flight position, snaps free, and warped rudder starts model in circling flight. Arrange adjuster so rear-most rubber band snaps free when front one breaks.

It takes surprisingly large amount of



140-MILE DISTANCE SOARER



solder on ballast wire to bring model from normal floating glide to which it has been adjusted to fast flat glide you need for start.

When the model is launched from hill-side, it should go out into the wind for considerable distance before gadgetry operates to drop extra weight; it should be far enough out into valley to clear the launching hill. If any thermals are present, you are apt to see it go right up out of sight. Length of fuse depends upon wind strength—the more wind the longer fuse should be, since wind tends to carry model back toward hill's face.

Fuse used was venetian blind cord boiled to remove wax, then dipped in saltpeter solution. When dry, cut up as needed.

A dozen gliders were launched off Wurtsboro Mountain in southeastern New York state. Gliders were picked up in East Orange and Lakehurst, N. J., distances of 50 and 140 miles.

Money Making Workshop Project . . .

Take this hanging desk lamp: 49c for plastic salad bowl, 19c for plastic flower pot, plus scrap tubing, wood cut to desired shape, light socket, cord, and light socket screw plug.

In adapting the unlimited forms available, there are two things to remember. First, most plastic will be deformed by excessive heat and therefore, when building lamp, wattage of bulb should be kept as small as possible, or increase distance between bulb and plastic shade. Second, heat created by bulb must have method of escape; three holes were drilled in top of pot for this purpose. Center hole is used to connect light socket to flower pot.

First, cut hole in salad bowl slightly smaller than size of flower pot. Pot is then glued to bowl by means of good

plastic cement, cord attached, and socket installed.

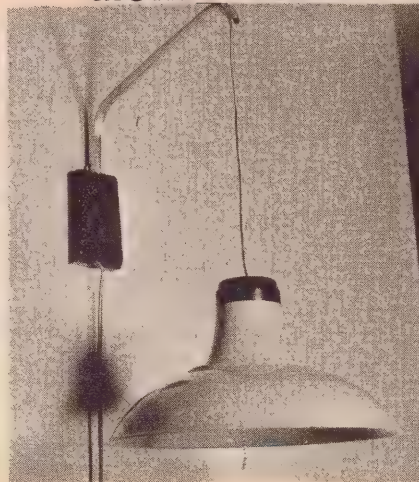
To adjust lamp to any height, lamp is moved into position and then cord is kinked at the base of wooden holder. This simplifies construction, doing away with counterbalancing.

New Club Names. Club secretaries are urged to add these groups to the initial listing that appeared in the last *Air Trails Model Annual* and the supplementary listings which appear in each issue of *Young Men*.

ARKANSAS: Harrisburg Broken Prop Club, c/o Davey Thomas, Box 545. **CALIFORNIA:** Berkeley Kensington Modelers, c/o W. H. Kyle, 1379 Cedar St. (LA 6-2569); Los Angeles Radio Controllers, c/o W. L. Butler, 8856 Earhart Ave., L.A. 45. **ILLINOIS:** Belleville Miniature Race Car Club, c/o Kenneth Meyer, 1716 Duncan Ave.; Chicago U-Liners, c/o

Raymond Obirek, 1625 E. 84th Pl., Chi. 17. **KANSAS:** Ft. Scott Sod Busters, c/o Grant Besley, Rt. 4.; Topeka Parrots, c/o Murray Hamilton, 1108 Quincy; Wichita R.C. Club, c/o Bob Hardesty, 633 S. Estelle. **MARYLAND:** Bethesda Clobber Club disbanded—new group is Montgomery Aeromodelers serving community of Kensington, c/o C. P. Howerton, 3807 Everett St., Kensington. **MASSACHUSETTS:** Holyoke Model Maniacs, c/o John Bien, 123 Brown Ave.; Somerville Sky Scrappers, c/o John Champoux, 217 Willow Ave. **MICHIGAN:** Flint Balsa Termites, c/o Chuck Robert, 4412 Cuthbertson St. **MISSOURI:** Brigeton Balsa Bugs, c/o Bill Sutton, 45 St Mary's Lane, St. Ann; S. St. Louis Roaring Motors, c/o Emil Fett, 5235 Bonita, St. Louis 9. **MONTANA:** Great Falls Electric City GMC, c/o D. J. Sappington, 510 34th St., N. **NEW JERSEY:** Franklin Crankcase Crackers, c/o J. G. Scott, 1 Oak St.; Towaco Flying Demons, c/o Donald Davies, Jacksonville Rd. **NEW MEXICO:** Las Vegas Prop Busters, c/o V. E. Potts, Rt. 1, Box 528. **NEW YORK:** Bronx Piston Poppers, c/o Thomas Paganini, 2321 South Blvd., Bronx 60; Brooklyn Wakefield F.A.I.-Nordic Group, c/o R. S. Paul, 3036 Brighton 4th St., Bklyn. 35; Rockland Model Club, c/o Ed Jersey, 8

MONEY-MAKING WORKSHOP PROJECT





Young Men's World

Jefferson St., Haverstraw; NYC Thermal Hunters, c/o A. Silverwater, 19 E. 103 St., NYC 19. OHIO: Berea Glo-Mads, c/o Dick Jordon, 74 Jacqueline Dr.; Sidney Prop Twisters, c/o John Keysor, 933 N. Miami Ave.

PENNSYLVANIA: Harrisburg Sky Devils, c/o Lee Fleegal, RD No. 3, Locust Lane; New Castle Modelers, c/o Ed Gilmore, 638 E. Washington; Reading Aero Modelers Assoc., c/o John Nawochi, 314 Noble St. TEXAS: Houston Spring Branch Piston Poppers, c/o Lester's Hobby Center, 1818 Long Point; Sweetwater Modelers, c/o Mike Turner, 1801 Bristol Dr. WASHINGTON: Puyallup Wing Kings, c/o Rice Toy Center, 313 Meridian N. WEST VIRGINIA: Wheeling Flying Gnats, c/o Brenton Rhodes, 21 Poplar Lane, Bethlehem, Wheeling. WISCONSIN: Maple Bluff Model Prop Busters, c/o Bill Ward, 166 Kensington Dr., Madison. CANADA: Saskatoon Air Cadets, 107 Squadron MC, c/o Doug Roberts, 1120 14th East, Saskatoon, Sask.

FLORIDA: West Coast Modelers, c/o Wilbur Peaire, 3604 Bay-to-Bay, Tampa. INDIANA: Greensburg Tree Clippers, c/o J. E. Stone, 722 W. Sheridan St.; N. Indianapolis Cloud Busters, c/o Bobby Angell, 5505 Haverford Ave., Indianapolis 20; Kokomo-National Mite Race Car Association, c/o Carl Foster, 815 W. Virginia. LOUISIANA: New Orleans Ravin' Cajuns, c/o Ed Madere, 822 N. Broad St.; New Orleans Majestic Modeling Club, c/o Edward Wertz, 6301 Chef Menteur Hwy. MICHIGAN: Allen Park Aeronautical Radio Control Society, c/o J. W. Cooley, 6570 Buckingham; Grand Rapids Model Club, c/o Frank Stanford, 1836 S. Division. NEW YORK: Brooklyn Scream Demons of Sheephead Bay, c/o Carl Lobne, 2501 E. 21st St. NEW JERSEY: Parsippany N. J. Model Power Club, c/o Rich's Hobbytowne, Rt. 46. WEST VIRGINIA: Wheeling Flying Gnats, c/o Lee

Eddy, Box 506, Bellaire, Ohio. CANADA: Toronto, Ont., Sputterflys, c/o Academy Hobby Supplies 2622 Eglinton Ave.

Contest Calendar. List your hobby club's public shows, exhibitions and contests here. Advise YM not less than 90 days in advance, sending information to "Contest Calendar," c/o *Young Men*, 304 E. 45th St., New York 17, N. Y.

In these listings the address of the contact man is in the same city as the site of the event unless otherwise specified. This publication does not assume responsibility for changes in dates or errors in listings.

CONN.—Waterbury, Aug. 12. C/L air-model meet. J. C. McKee, 374 Circle.

MICH.—Detroit, Aug. 12. IMPBA model boat race. Charles Baxmann, 2991 Garland Ave.

IND.—South Bend, Aug. 19. Buzz-Exchange Club air-model meet. J. W. Greene, 1143 E. LaSalle.

CALIF.—Inglewood, Aug. 19. Skywolves' U/C race. D. C. Crystal, 805 E. Palmer Ave., Compton.

ILL.—Peoria, Aug. 19. Ill. Valley U/C championships. Morgan Baldrige, 418 S. Adams.

N.Y.—Albany, Aug. 19. Flying Modelairs C/L meet. A. L. Hurd, 39 Dove St.

N.Y.—Endicott, Aug. 19. Aeroguidance Society R/C air-model meet. Bernard Fox, 713 Delano Ave., Vestal.

TORONTO—Aug. 25-26. IMPBA model boat race. Toronto Society of Model Engineers, 228 The Kingsway.

WASH.—Seattle, Aug. 26. IMPBA model boat race. Seattle Marine Modelers, 9336 47th Ave., S.W.

N.Y.—Pelham Bay, Aug. 26. Bronx Piston Poppers' air-model C/L meet. CANCELED.

MICH.—Detroit, Aug. 26. Air-model meet. W. E. Bartlett, 14515 Asbury Park.

MASS.—Beverly, Aug. 26. New England R/C championships. J. K. Ross, Les Wilson, 1 Short St., Bedford.

First completed "Bunker Boat" (project appeared in Feb.-Mar. YM) comes from Arthur Simmons of Syracuse, N. Y. For his R/C hull he mixed copper powder with clear dope.

N.Y.—White Plains, Aug. 26. Exchange Club air-model meet. A.E. Lemberg, N. Salem Rd., Ridgefield, Conn.

ILL.—Marion, Aug. 26. Lions Club air-model meet. E. H. Aikman, 1020 N. Market.

N.Y.—Brooklyn, Sept. 1. Mirror Model Flying Fair. Ted Clodius, N.Y. Mirror, 235 E. 45th St., NYC 17.

OKLA.—Tulsa, Sept. 1-2. Glue Dobbers' F/F meet. W. H. Kehr, 4940 N. Johnstown.

MO.—St. Louis, Sept. 1-2. Annual model boat regatta. St. Louis Model Power Boat Club, 21 Santa Fe Drive, St. Louis 19.

PENNA.—Bethlehem, Sept. 2. AMRCA East-West model car race at Fox Speedway. Howard Fox, RFD #1.

IND.—Evansville, Sept. 2. AMRCA model car race. Bert Kuebler, 532 E. Parkland.

FLA.—Miami, Sept. 2-3. Hurricane air-model meet. R. J. Henning, 480 N.W. 135th St.

CALIF.—Marysville, Sept. 2-3. Exchange Club F/F meet. R. P. Fizer, 1132 LaCasa Ave., Yuba City.

WASH.—Arlington, Sept. 2-3. Seattle Radio Aero Club R/C meet. August Kerzie, 6733 13th, N.W., Seattle 7.

N.J.—Far Hills, Sept. 3. C/L air-model meet. C. M. Vanderwaart, Lamington Rd., Bedminster.

ORE.—Portland, Sept. 3. National championship DX Class model sailing races for Jim Walker trophy at Westmoreland Park.

MICH.—Detroit, Sept. 9. IMPBA model boat race. Charles Baxmann, 2991 Garland Ave.

N.J.—Perth Amboy, Sept. 9. C/L Flying Olympics. Adam Ginda, 21 Omaha Dr., Cranford.

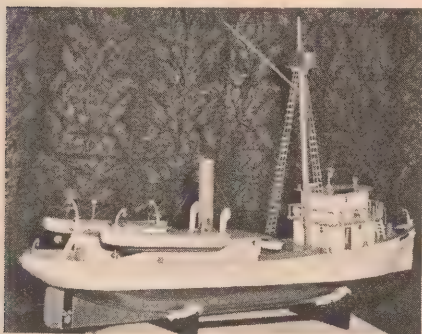
MICH.—Detroit, Sept. 9. AMRCA model car race. Glenn Fairabend, 20242 Russell.

CALIF.—Arcadia, Sept. 9. Air-model team racing. Les McBrayer, 101B Elm St., Alhambra.

ILL.—Harvey, Sept. 9. R/C Club of Chicago meet (for members). R. E. Webb, 1621 E. 87th St., Chicago.

N.J.—Lakehurst NAS, Sept. 9. Indoor air-model record trials. A. J. Becker, 2212 Griffith St., Philadelphia 15, Pa.

ILL.—Chicago, Sept. 9. Midwestern States air-model championships. P. J. Sotich, 3851 W. 62nd Pl.



Wide range of interest and age of members indicated by group shot of Corona, Calif., Model Boat Clubbers. Freighters, fire boats, cabin cruisers, PT's, racers and R/C!

N.Y.C.—Flushing, L.I., Sept. 9. IMPBA model boat racing at Kissena Park. Bob Graham, 127 Cottage St., Jersey City 6, N.J.

N.Y.—Buffalo, Sept. 15-16. Flying Bisons western N. Y. air-model championships, including R/C. Vernon Krebhiel, Arondale Rd., Williamsville.

IND.—Indianapolis, Sept. 16. IMPBA model boat race. IMPBC, 7550 Pendleton Pike.

WASH.—Seattle, Sept. 16. Seattle Model Yacht Club Greenlake race. 737 N. 100th.

ILL.—East St. Louis, Sept. 16. Thermaleers' air-model meet. E. C. Linthicum, 7630 Hawthorne Pl., University City, Mo.

CONN.—Hartford, Sept. 16. C/L team racing. A. F. Zepka, 34 Highview Ave., Wethersfield.

MICH.—Wyandotte, Sept. 16. Air-model R/C meet. B. R. Cullin, 2658 Edgemont Rd., Trenton.

CALIF.—Los Alamitos, Sept. 16. Thunderbugs' F/F meet. Richard McGrath, 5829½ Olive, Long Beach.

IND.—New Castle, Sept. 16. AMRCA model car race. Russ Harter, 805 S. 20th St.

OHIO—Akron, Sept. 23. Ohio State AMRCA model car championship race. Jack Oliver, 661 Ardella Ave.

PENNA.—Bethlehem, Sept. 23. AMRCA model car race. Howard Fox, RFD #1.

N.J.—Lakehurst NAS, Sept. 23. Indoor air-model record trials. A. J. Becker, 2212 Griffith St., Philadelphia, Pa.

TORONTO—Sept. 23. IMPBA model boat race. Toronto Society of Model Engineers, 228 The Kingsway.

U.S.A. Air-Model Teams. Peter J. Sotich, 1956 International Competition Committee chairman for A.M.A., announces the following qualified for this year's teams. **WAKEFIELD:** Cliff Montplaisir, West Chester, Pa.; Jerry Kolb, Willo-wick, Ohio; Joe Bilgri, San Jose, Calif.; Herbert Kothe, Omaha, Neb. **F.A.I. POWER:** Bill Hartill, Passaic, N.J.; Lawrence Conover, Cedar Rapids, Iowa; Dick Sladek, San Diego; W. F. Huffman, Ft. Worth. **NORDIC GLIDER:** Bill Hartill; Bob Moulton, Worth, Ill.; Joe Bilgri; Carl Hermes, Arlington, Texas. These flyers will compete in person or by proxy at the respective Finals. "As of June 24th," Mr. Sotich reported, "We have no assurance that our team members will make the trip since no sponsor has been forthcoming. It is our hope to get the boys overseas one way or another."

WE'D LIKE YOU TO MEET..... E. Paul Johnson



We'd Like You to Meet . . . E. Paul Johnson . . . An electrician by trade, Paul has been active in model plane building since 1925. Most known in modeling circles for his R/C work, he has placed high in several Nationals (2nd—1949, 4th—1950, 9th—1948); took so many R/C meets in midwest area that other R/Cers just battled for places from 2nd on down. Besides his contest prowess, Paul is known for his unorthodox plane designs, and for his R/C experimental work; he has long been a pulse control advocate—his 1948 Nats placer had a form of pulse control, though escape-ments reigned practically supreme then. Has had many magazine articles published on various angles of R/C work. On his trips to the model plane wars, Paul is always accompanied by his wife Lois (who has built and flown her own R/C plane) and daughter Carole, now 12. Many friends of the Johnsons do not know that they are very successful amateur magicians; have put on many shows in the Des Moines area. Paul spent 3 years in the Army Signal Corps, engaged in Cryptography Repair. He is a member of the Des Moines Modelaires.

His Hobby. Fourteen-year-old Larry Heyns of Grand Rapids, Mich., says his hobby is driving a midget "Offie" which he built with the help of his dad. Frame of car is made of 1¼" angle iron; Model

"T" steering shaft is used with reduction gears.

Car has pneumatic tires; power is 2 hp Briggs and Stratton engine. Clutch and brake both operate by single hand lever. Hood is formed from ½" electrical conduit piping. Larry reports the car will attain a speed of 18 mph and is called "Ma's Worry."

Congrats, LH—you walk off (we mean, ride off) with the monthly \$25 what's-your-hobby money.

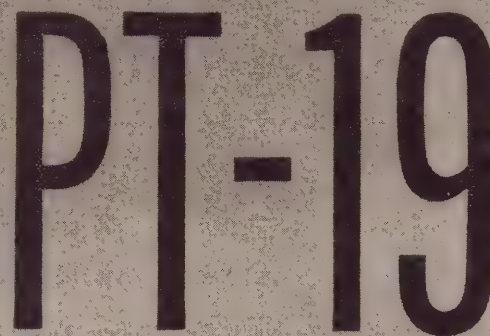
News of the International Assoc. of Automotive Modelers. The May-June issue of the I.A.A.M. Bulletin was a "Racing Car Issue," while the July-August issue features the Chrysler line of cars, and its predecessor—Maxwell. Future issues will feature Aston-Martin, MG and other famous makes. Each of these Bulletins includes scale plans of cars, construction kinks, many very clear illustrations, as well as news of special buys of interest to the scale model car builder. The Bulletin is included in the dues of members of the I.A.A.M., of course. They have a new publication—the IAAM Plan Book No. 1—which will be sold to members for 50c per copy, and to non-members for \$1. This is the first of a series of such plan books, to be published as authentic plans are collected; the first one contains outline and detail drawings of the 1946 Cicitalia Grand Sport, Porsche 1500 Speedster, Pegaso Z-102 Berlinetta, Mercedes-Benz 190-SL and W196R, 1928 Kissel White Eagle, and very complete drawings of the 750 cc. DOHC Austin racer. Dues to this organization are \$2 per year, and information may be had from the Secretary, Mr. Leonard Liebhaber (119-24 147th St., So. Ozone Park, N. Y.).

We hear from Carl Noward (1384 Berdan Ave., Toledo, Ohio) that car racing seems to be picking up all the time, and he hopes engine and car manufacturers will note this fact and hit the market with some new products—or start again to make some of the good old ones—like Dooling engines. It seems that Dooling couldn't resume production as intended due to defense contracts.



◀ **What's Your Hobby?**

A black and white photograph showing the silhouette of a biplane in flight. The aircraft is seen from a low angle, with its wings spread wide. The background is a light, textured surface, possibly a sky or a wall. The image is grainy and has a vintage feel.



CONCLUSION

**Latest word from Chuck is that his low-wing beauty
has racked up over 100 flights and won another meet!
Makes a giant-size control line model, too**

■ In our previous article (*Young Men*, August 1956 issue), we presented drawings for the fuselage, fin, rudder and cowl of our radio-controlled Fairchild PT-19. We gave the background of the big plane, and our success to date with the R/C model.

Since starting this project I have acquired one of the new Babcock Mark II compound escapements. After extensive test flying it has proven to be just what I needed for the big R/C ships. It not only handles fully wound $\frac{1}{4}$ " brown rubber but the thicker English "Dunlop" rubber as well! This combination is a "must" for the PT's large rudder and steerable tail wheel. Follow the installation sketch on the drawings.

The Babcock motor control unit has been used on the last thirty or so flights and is the simplest and most reliable type of motor control so far devised.

Once the model is completed and still minus receiver and batteries, pick it up by the top longerons and see how she balances. The required balance point depends upon several factors.

First of all, the C.G. as shown on the drawing will give extremely smooth longitudinal stability as required for control line and elevator controlled R/C. If your PT-19 is to be flown F/F or rudder-only R/C, balance it $\frac{1}{2}$ " behind the spot shown. A K&B Torp .19 would be more than power enough for F/F, in which case only 3 degrees right thrust should be used.

Shift the batteries and receiver until she balances level when lifted at the aforementioned spot. Now mount your receiver as shown on the drawings. A suggested means of holding the batteries in place is to hollow out a piece of styrofoam (which acts as a shock base) with rubber bands stretched over all.

For the benefit of modelers not acquainted with the way Babcock 3 channel equipment operates, here are a few pointers. Pulsing the stick to either side actuates the compound escapement just as a button on the single channel sets do. Therefore one pulse is right rudder; two pulses, left rudder and three and

release is a change of motor speed.

The elevator is operated simply by pushing the stick forward for down and back for up, the elevator staying in whatever position desired even when the stick returns to neutral. As you can see this is different from the self-neutralizing type which causes a model to act jerkily. The "trimmable" type gives the smooth flight characteristics of full scale aircraft and when combined with a plane as stable longitudinally as the PT, even the inexperienced modeler will find flying a cinch.

Dick Schumacher's method of handling the "stick" is to "beep" the stick a given number of pulses depending on the degree of elevator travel desired. For instance, starting with the elevator in the neutral position—four short beeps will give full up, four more forward on the stick will bring it back to neutral.

A practical example is to say we're going to do a wingover: with the PT cruising along in level flight give two beeps forward on the stick. As she goes into a shallow dive apply two beeps back, and when she starts up kick left rudder, which will result in a near vertical bank. Touch of right and she's leveled out heading back!

A few minutes' practice at home will soon give you the "feel" of the controls.

With your model completely finished, make a check of everything while at home, and that includes operating all controls with the motor running. Experiment with various glow-plugs to get the best two-speed operation. Generally a low nitro content fuel such as Supersonic 100 will prove the best for all conditions. At last that's the way it has worked out for me.

Since the first article was written the PT-19 has won another first place and she now has a total of 103 flights!

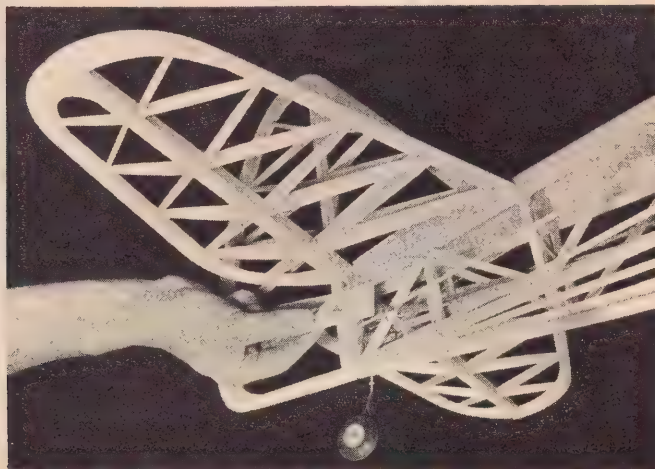
Take a little extra time and you will have a model to be really proud of, whether on display or in the air. Good luck. If you have any questions write me c/o *Young Men*.

(Complete construction instructions are available with the full size plans.)

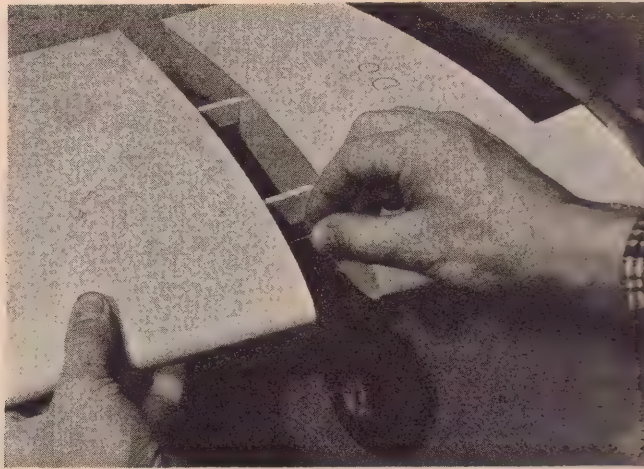


Full-size plans for PT-19 with instructions on Plan #856 by Hobby Helpers, 770 Hunts Point Avenue, New York 59, New York (75c).

Good idea of tail surface construction come from this close-up. Rubber is two strands of $\frac{1}{4}$ " which runs to Mark II.



Antenna runs through starboard wing. Here connection is being made to center section. Plane can be made as U/C.



What do you look for in a model airplane fuel?

Whether you do stunt, contest, or just-for-fun flying, you probably are most interested in the very best possible all-around performance that a fuel can give to your engine. And that's exactly the reason why more and more modelers — novices and veteran flyers alike — prefer Testor's "39," the outstanding all-purpose fuel for all standard model glo engines! See for yourself on any basis of comparison you choose. Check it for easy starting . . . all-weather performance . . . power output . . . quality and quantity of lubrication. You'll agree that Testor's "39" makes flying more fun . . . gives you the dependable operation you want under every flight condition. It's a safe fuel, too . . . formulated to protect your engine and insure you more hours of enjoyable, satisfying flying time. Records? Testor's "39" holds them in both speed and endurance classifications! Get "39" now. You'll find the familiar red, yellow, and blue cans at dealers everywhere . . .

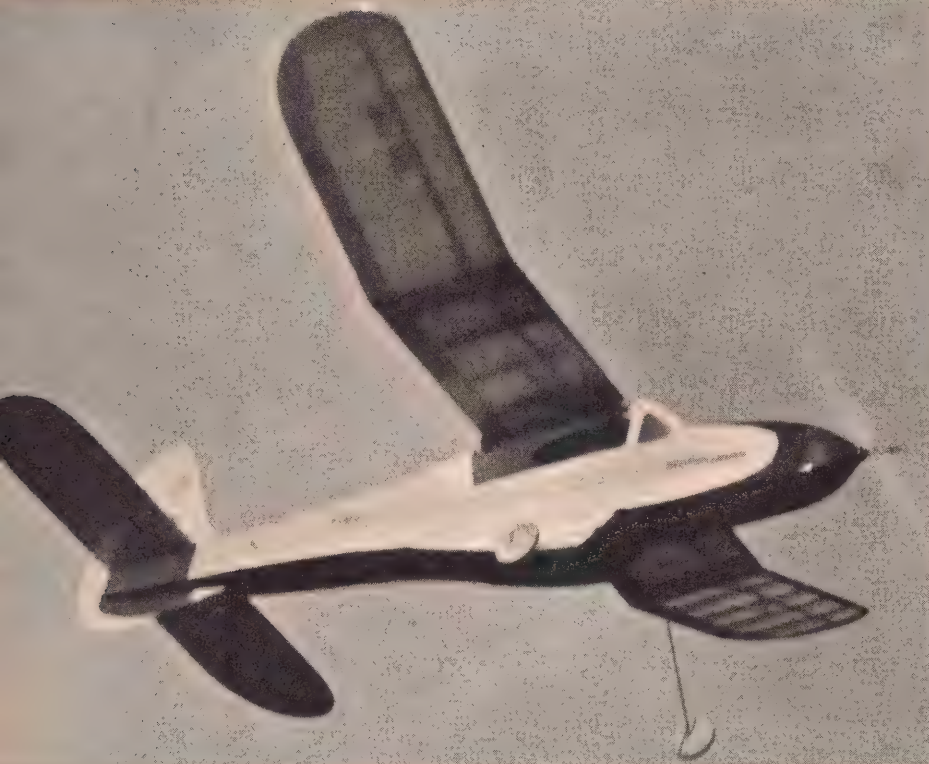


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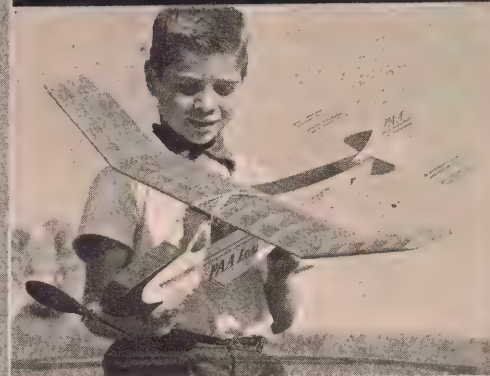
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USA-56

TRAINING PLANE

By PAUL DEL GATTO



■ Pan American's gas-powered cargo event without a doubt is one of the most exciting of all events, and each year its audience keeps growing. This is the type of event where you can ask "Who's first?" only after the last flight of the day has been made; for until that time the lead keeps shifting with virtually every flight made.

Once having set down the rules and flight procedure we were able to go on with the design of a model. As our first endeavor in a rubber-powered cargo design we decided on a standard type of model, completely functional and simple to construct from every aspect.

Construction is easy, particularly with the aid of the construction sketches found on the plan.

The covering of the model if neatly done will contribute much to its success structurally and performance-wise. For a finish, three coats of thinned-down dope

will be sufficient prior to testing the model. After preliminary flight tests and adjustments have been made, add another coat of dope. Between applications rub down the surfaces with fine sandpaper.

On the original model we made our best flights with a hand-carved propeller as shown in the plan, but since that time we have also done a lot of flying with a Paulowina prop and likewise obtained some very good results. So if you feel hesitant about carving your own propeller, start off with a Paulowina. Your local hobby dealer should be able to supply you with this item.

Power your model with 20 to 24 strands of 3/16" T-56 brown rubber 24" long. Use two to four strands less with the Paulowina propeller.

When you reach the flying stage, remember not to get over-anxious. Think about what your next move will be be-

fore you make it. Add cargo in small amounts up to about one-half ounce for each new cargo attempt after a previous successful attempt. When you get above eight ounces you might find it better to increase the cargo in one quarter of an ounce units. Use only a moderate amount of turn. Remember, you are carrying cargo now, not sniffing thermals.

Rubber Powered Cargo Rules

1. Maximum wingspan 30".
2. Maximum prop diameter 10".
3. Maximum distance between motor hooks 18".
4. Must be glided with cargo from a height of 5' before each flight, without damage.
5. Must fly 20 seconds and land without damage to plane or loss of cargo.
6. Cargo must be enclosed.
7. Folding, freewheeling or feathering propellers not permitted.
8. Heaviest weight lifted wins.

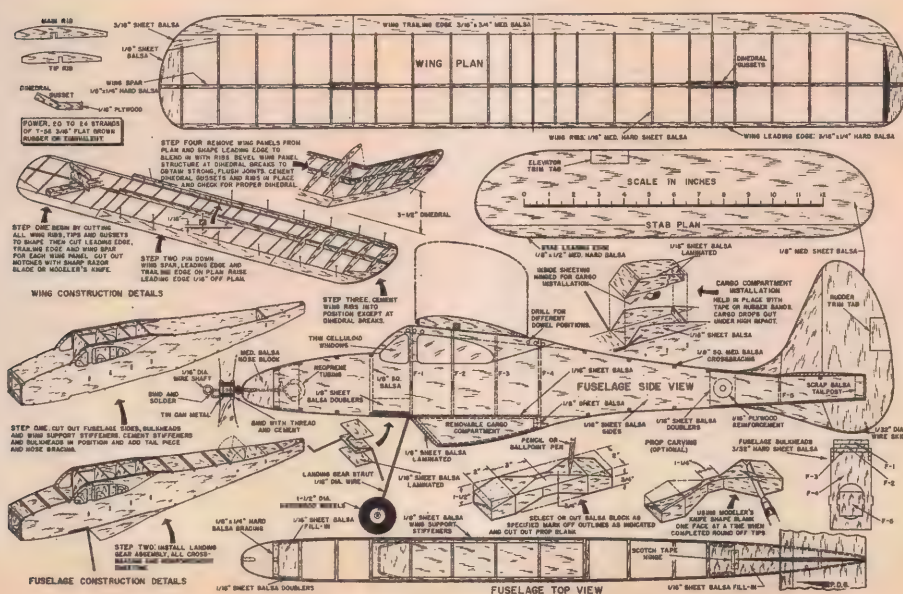
BILL OF MATERIALS

(Balsa unless otherwise specified)

3-1/16" x 3" x 36" med., fuselage sides, wing ribs, cargo compartment and fill-ins. 1-3/32" x 3" x 18" hard, fuselage bulkheads. 1-1/4" x 3" x 36" med., stab, fin, sub-rudder, cargo compartment, wingtips and wing support stiffeners. 1-1/8" x 1/8" x 36" med., fuselage crossbracing. 1-1/8" x 1/4" x 36" hard, wing spar and nose bracing. 1-3/16" x 3/4" x 36" med. (tapered), wing trailing edge. 1-1/8" x 1/4" x 36" hard, wing leading edge. 1-1/8" x 1/2" x 18" med. hard, stab leading edge.

Med. balsa block for nose and tailpost; 1/16" dia. wire for landing gear and prop shaft; 1/32" dia. wire tailskid; propeller block or 10" dia. Paulowina prop; tissue covering; 1/16" plywood for dowel support; 3/16" and 1/8" dia. dowel; 1 1/2" dia. hardwood wheels; cement; clear dope; thrust washers; 50' of 3/16" T-56 flat brown rubber; rubber lubricant.

Full-size plans for USA-56 are on Group Plan #956 by Hobby Helpers, 770 Hunts Point Avenue, New York 59, New York (50c).



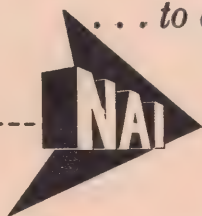
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stance, he obtains a wide variety and range of Engineering experience in Industry during his work periods. He has the opportunity to develop confidence, poise and maturity. He is also establishing two years' seniority with a fine company. After graduation, he may continue his career with the company for which he worked as a Co-Op student.

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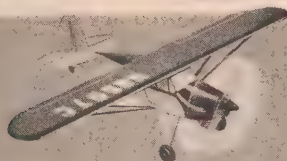
You fly this exciting seaplane U-Control (it's a cinch, too) from any pond, lake or even a small puddle. And no wet feet! You're standing on the shore all the time. The film strip above shows some of the terrific flying fun you can have with this new model. You'll love the way it taxis along the water . . . the exciting moment when it's airborne . . . the all-around flying performance. The model is all prefabricated . . . with a carved balsa fuselage and all parts cut or shaped for quick, easy assembly. A mere \$1.95

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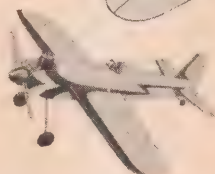
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All prefabbed, carved balsa fuselage, model
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Low cost speedboat thriller. Prefabbed, 12"
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Model speeds over 40 m.p.h. Direct wheel
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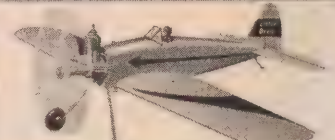
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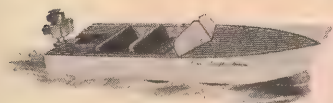
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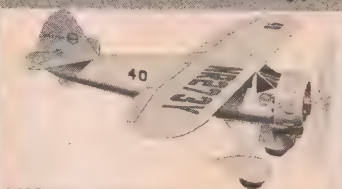
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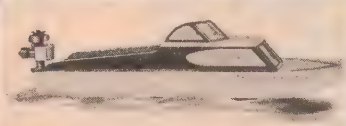
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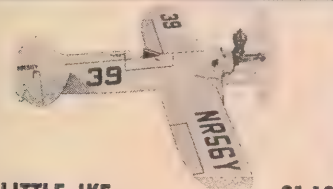
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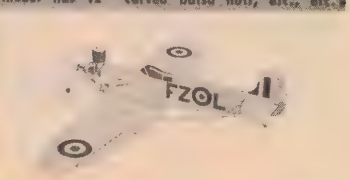
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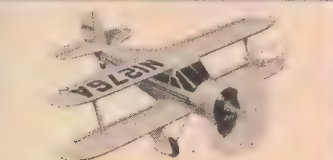
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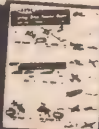
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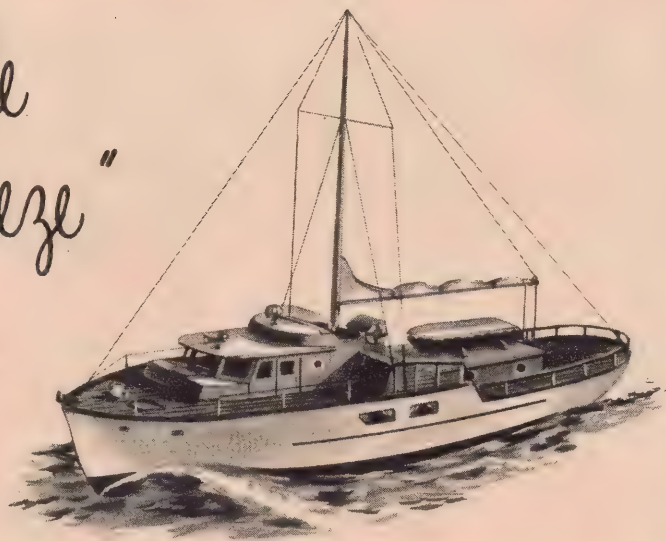
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Air Adventurers

(Continued from page 8)

all other organizational details of the club. Between the first and second meetings, the club members should consider the question of which of their members are qualified to serve as permanent leaders. These can be elected during the second meeting, following which the temporary chairman turns the meeting over to the newly elected president. It is suggested that four officers be elected — a president, a vice president, a secretary and a treasurer.

The president is the chief officer of the club and presides at all regular and special meetings.

The vice president assists the president, presides at meetings during the president's absence and succeeds him in office in the event he moves or for some other reason is unable to complete his term of office.

The secretary is responsible for the records of all meetings and club activities.

The treasurer keeps all club financial records, collects and safeguards all membership dues and club funds and disperses such funds when directed to do so by vote of the membership. It is advisable that the Senior Advisor assist the treasurer in the handling of club funds.

The president should appoint a committee to draft the club constitution and bylaws which must be accepted by majority vote of the club membership. Here again the Senior Advisor can be of assistance. The constitution should state the name of the club; outline its pur-

(Continued on page 48)

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Now every modeler . . . from Junior to Pop to Grandad . . . can LEARN TO FLY better, quicker, economically. No hours of tedious construction only to see your precious handiwork wrecked in an early flight . . . no beautiful plastic job ballooning out of control and into a hazardous nose-dive! Now with adjustable thrust angle and other exclusive training plane features, FLIGHT TRAINER avoids those costly crackups, carries the beginner confidently from first flights up to and including stunt flying! It's the first plane specifically designed to TEACH the art of model flying! Get over to your dealer as soon as possible and see every detail, including the big wing area and unique re-assembly feature developed by Thimble Drome engineers



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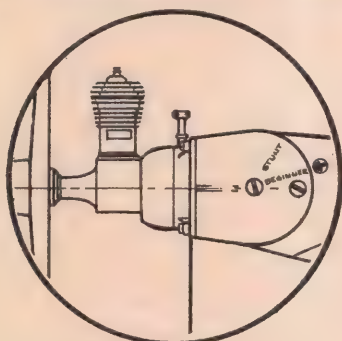
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NORTH AMER. SABRE JET F-86D



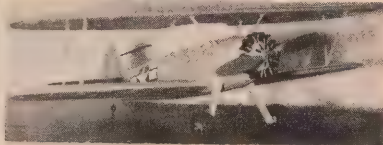
24" Span. Plan shows Jetex 150 motor installation. Equipped with scale Veco wheels, formed plexiglass bubble canopy and turned balsa radome. \$4.50 Construction Set less motor.....

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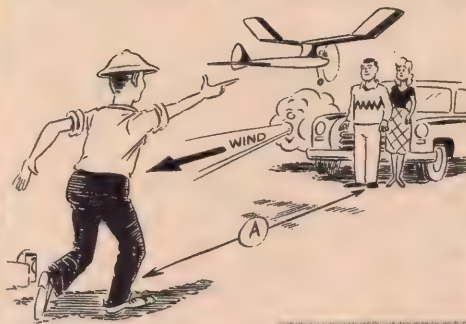
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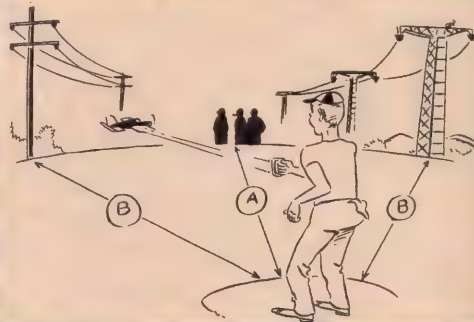
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MASC says C/L'ers should stay 150' (A) away from spectators; 200' (B) away from any type of overhead lines.



FLY SAFELY!

When operating free flight models stay 150' (A) away from cars, people—Model Aviation Safety Council.

■ The California State Meet was one of those things, a contest which as a whole couldn't get going.

The FAST Club and the Larks ran their specialties, team racing and R/C, providing all their own equipment and personnel, so consequently they got off to a fast smooth start. Speed was whipped in line by Leighton Conrad after personnel and equipment promised did not show up, but free flight—ugh! Some few modelers who used their heads managed to get in their flights before the wind came up, others waited three hours for one flight and managed to get in 3 flights in six hours, with 3 and 4 events to fly in.

Saturday had some real outstanding flying. Joe Foster went out after Bob Dagand's indoor glider record and managed to tie it at 1:16.4; he did not fly in the contest. Curtiss Minier who at one time held the senior record topped all contestants with 1:08.7, just a second shy of the record.

In speed Gayle Clements led in C for a long time, only to have Jib Nightengale go faster than he ever had in his life at 163.87, which is probably faster than anyone has ever gone on two lines. Gayle had 155.81 for second. In Half-A Bob Tendricks did 89 plus for fast time.

In team racing Gene Kessler of San Diego really showed why he wins so much, with a first in every race he entered. His lap times for half-mile were in excess of 98 and the engine—it's hard to believe—was made of Torp, McCoy and Dooling parts put together in one fine mill.

In R/C Howard Bonner got off to an outstanding 202 points which held up through the meet; this is the first time anyone on the coast has topped 200.

On Sunday we were very pleased to see that things got started with a bang, on time, with timers and lots of contestants. The speedsters set the only records,

Bill Wisniewski topping his own Class A record with a screaming 145.16 with his Torp .19 and a 6/10 Tornado cut down to 5 1/4 inches, and Blast. Gayle Clements who holds the A record set a new Senior Class B record with 143.94 using a Torp .29R, a Tornado 7/10 modified and Bill's Blast. Bill had some tough luck with his B job, throwing a prop on one flight, blowing a plug on another, then calling in too soon on his third—later laps were timed at 150 plus.

These speed merchants were really going—several topping 140 in B, most of them using Stanzel's Mono-Line. Bill Wisniewski seems to have the line attachment problem licked by removing a wing panel for the hookup, then refastening the panel with small wood screws. Jim Nightengale, Arnold Nelson, Bob Hendricks and Eddie Shipe passed up the sanctioned WAM contest for this State Meet and let it be known to all that these guys know what makes speed models go, Jimmy mixing his own special "blast" for most of the flyers, and most of them going mono on their A & B jobs. Gayle Clements was easily the class of the Jr-Sr's.

In flying scale Howard Yonkers also journeyed down from the WAM meet to enter his super-jet-powered MiG and Vampire. These models are really spectacular in the air, finished beautifully and faithfully built, equipped with fuel shut-offs so that he can land them at any time. Frank Estrada's Navion was another ship which really stopped the crowd, with all detail in the cockpit.

In R/C Ray Downs and Dale Root started quite early jumping over one another in points, only to have Colby Evett pass up both of them with a fine 173 1/2 point flight. Dale Root's Ascender was spectacular in its red, white and blue color scheme and very fast flying, while Ray Downs' beautiful orange and blue, slower biplane was most realistic

(Continued on page 57)

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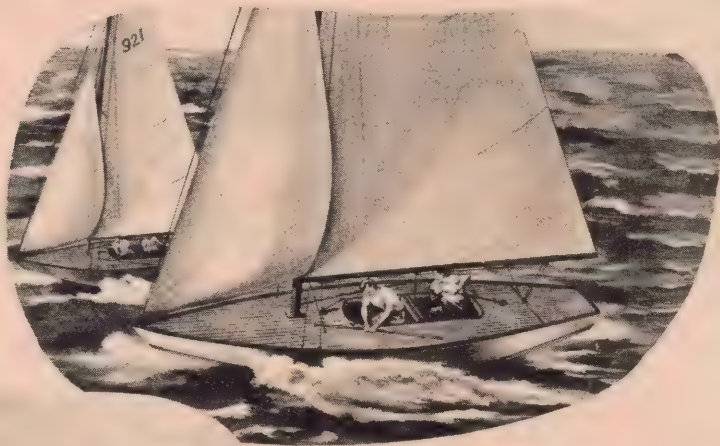
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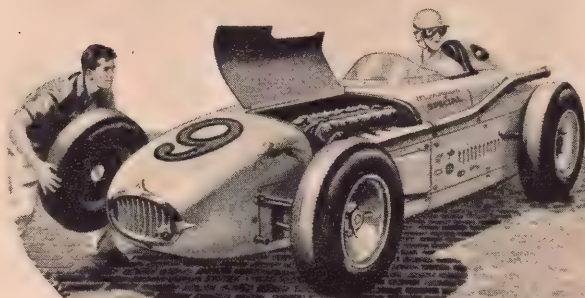


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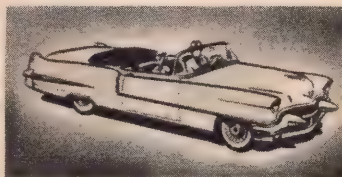
P9 DC-3 Airliner • 98¢



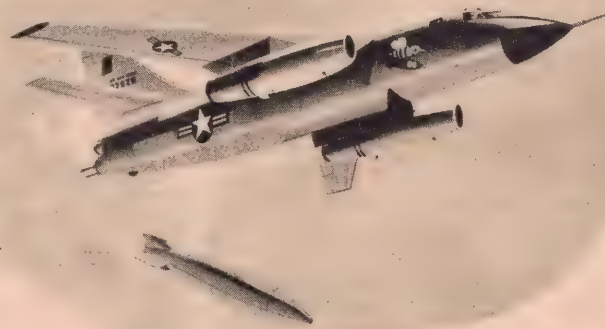
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MODEL BOATING

■ Our photo-of-the-month (above) comes from Bill Baughman. Shows Fred White of San Diego Model Yacht Club (in cap) as his V-29 battles it out with boat of Al Smith of L.A.M.Y.C. Kelly Brown gets set for his turn (in background).

American Boat Modelers. Big news this month is announcement that you can register with the American Boat Modelers (ABM). For your fee you get a registration card, emblem decals, ownership labels to affix to your craft, information on how to start a model boat club and conduct boating events, *plus* at the end of the year a directory of all registered model boat men in your state. This includes names and addresses. It is anticipated that this will bring more enthusiasts together than anything done to date in the annals of the hobby-sport.

Objective of the AMB is to encourage more sport and contest power boating and sailing and to support the sanctioned regatta and race programs of such groups as the I.M.P.B.A.

Boating Sketches. Our "Sketchbook" items this issue include Drawing A: simple airboat built of balsa has rudder built into engine pedestal. Snappy performance on calm water; light weight enables it to be run over smooth grass!

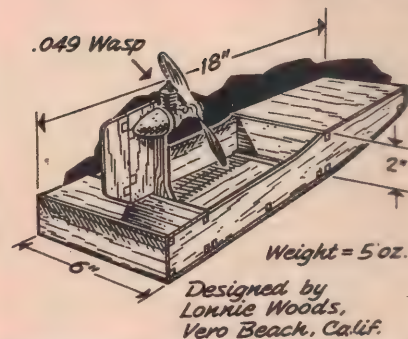
Drawing B is from Edward St. John, Elmont, L. I., N. Y., who encloses radio receiver of model boat, in plastic bag, in-

flates bag, binds neck to leads with rubber bands. Receiver thus protected from dust, dampness and will not sink!

Along with most other forms of modeling in the New York area, speed boating by the New York Model Knights has had poor weekend conditions. Bob Graham (127 Cottage St., Jersey City 6, N. J.) tells us that on one day, Henry Parohl put his new Class A boat out for a first run, and only two watches were used to record the speed; they indicated over 70 mph—which would have been a new record in this class (over 30 cc.) had the required three timers been checking.

Max Biederman had his new Class C boat (over 10 cc.) doing 77 mph, while Joe Horvath's Class C job did about the same. Bob got around 71 mph from his C boat, and his E hit only 68 mph, then broke a con rod. Joe Horvath did 75 mph in Class D (10 cc.) and Henry Parohl just 10 miles less in Class D. Fred Manderville's E boat also hit 65, while Jack Scholl made about 60 in C. Tom Murphy and Larry Richards found the water much too rough for their Class F (5 cc.) craft. Ed Kalfus, former holder of the Class B record at 80 mph, has a new one in this size (30 cc.) on the way; record in this class is now held by Watkins of Chicago with 81 mph.

Further speed boat news comes from Robert Choffee (1000 Lake Shore Dr.,



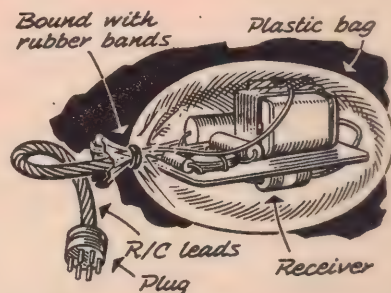
Sketchbook drawing "A", simple air-boat.

Detroit), Publicity Director of the D.M.P.B.C. He notes that two club members, Mike Succarde and Harry Rodenhiser, are very active with flash steamers, Mike having finished a new Class A boat with which he hopes to top his record of 69 mph. Harry is rebuilding two steamers for competition this year.

The Detroit club boasts a "Midweek Record Group," with regattas every Wednesday evening, and the events sponsored by the D.M.P.B.C. and the I.M.P.B.A.; group consists of members who have made runs in excess of 90 percent of the world record in their class. They are limited to use of one boat each—the boat with which they came within 90 percent of the record. Midweek group has own Secretary-Treasurer, its own lines, watches and all other equipment necessary for official running; it operates as a separate unit and does not interfere with regular club activities or regattas.

We hear from the Los Angeles area that there are still more entrants (some quite secret!) for the Los Angeles-Catalina R/C model boat sweepstakes. Of course, there is nothing official about this attempt, and as far as we know there are no prizes for the first to make the crossing. (What fine chance for publicity for R/C equipment or model boat manufacturers—or even for makers of larger boats who would be willing to put up a few hundred dollars for prizes!) However, the person who does get across first will certainly be acclaimed by the model world—as will the equipment used, such as engine, radio gear and batteries. Makers of the English E.D. equipment underwrote a similar run across the English Channel, scored a tremendous "propaganda" victory when a boat using their radio apparatus and their diesel engine actually did make the crossing.

Commercial Notes. Model boat builders thinking of trying steam propulsion will be interested in powerplant offered by Allyson Co. (Box 115, Brevoort Sta., Brooklyn 16, N.Y.). Uses single cylinder oscillating engine to provide 18 minutes of full-speed power driving boats up to 28" long, at speed of about 5 mph. Boiler has safety valve, whistle, is fitted with



Sketchbook drawing "B" from Ed St. John.

AMERICAN BOAT MODELERS

Box 75

Boulevard Station
New York 59, N. Y.

Enclosed is my 50c registration fee for the A.B.M. Please send my card, emblem decals, ownership certificates now and state directory of fellow boat modelers (at year's end) to:

Name (please print)

Address

City Zone

State Age (ym956)

NEW! by Sterling Models

"JET-AGE" PLASTIC BOAT KIT! Chris-Craft 21' COBRA

The
Rip-Roarin'
Raciest
Run-
about
of 'Em All!

Kit B-16
\$298*



*Electric Motor Not Included.

Shelf Model! Power Model! Or Both!

64 jewel-like pieces, molded in 4 authentic colors. A wealth of authentic detail, from gleaming bow light to jet-like tail fin. Two exquisitely detailed figures in perfect scale! Kit contains all necessary parts for power operation, including battery box, steel shaft, stuffing box, power prop, etc. Specially designed shelf mounting base included. Simple, easy-to-read instructions for quick, easy assembly. Get your COBRA at your dealer's... today!

NEW! LI'L BEAVER ELECTRIC MOTOR

Designed for Peak
Performance!

Installs easily . . .
anywhere! \$139




NEW! MONOCOUE

for Radio Control!
Kit FS-4 \$11.95

Wing Span 64" Length 40 3/4"

- Rugged, simple construction!
- Built-in stability!
- Ideal for Sport Free Flight!
- Realistic as control line model!
- Completely prefabbed. All parts shaped and die-cut.
- Complete instructions—including radio control installation.

For engines from .19 to .45 displacement.



When used with Sterling Plastic Boat Models, special design requires no screws or bolts. Snaps right into place. 1,001 other uses! 1 1/2-6 volts.

MODEL LB-139

NEW! CONTROL LINE SCALE PROFILES BY MATT KANIA!

Unbeatable Stunt and Combat Performance!



Curtiss P-40 TIGER SHARK
Span 27 1/2" Length 21 1/2"
Kit S-7 \$1.95



MESSERSCHMITT ME-109
Span 26 1/2" Length 21 1/2"
Kit S-8 \$1.95

For engines from .09 to .19 displacement

Complete Your Schooling - Then

GO ARMY AND GROW

WRITE TODAY FOR COMPLETE CATALOG! Send 10c in coin to cover handling and mailing to Dept. YM-9

Sterling

MODELS

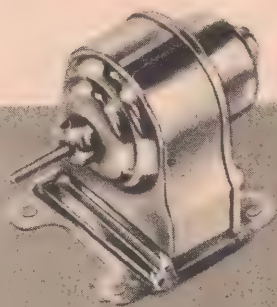
Belfield Ave. & Wister St.
Phila. 44, Pa.



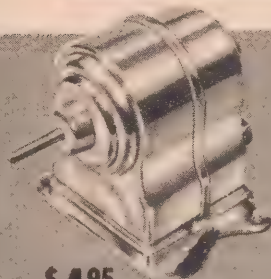
A WHALE of a lot of POWER...

Torque . . . Efficiency
Low Amp Drainage

The Entirely NEW No. 14. 12,000 RPM at 6 volts. For boats 20" and over. Free load amp drainage .55. Carbon brushes. Weight only 3 oz. Size J - 11/16" x 2 1/4" x 1 3/4"



\$3.00



\$4.95

The Entirely NEW No. 15. 10,000 RPM. Operates on 9 volts. Nickel-plated case. Permanent alnico magnet. Carbon-tipped brushes. A motor for big models. Size I - 11/16" x 2 3/4" x 1 1/4"

Other K&O hook-ups... a size for your every need



- No. 10. Operates on 1 1/2 to 3 volts. Size 7/8" x 1 3/8" x 1 1/2"
- No. 11. Midget—perfect for small boats and cars. Size 1" x 1 1/8" x 7/8"
- No. 12. 10,200 RPM at 3 volts. Unsurpassed in power. Size 1 1/8" x 1 1/8" x 1 1/2"
- No. 13. Ideal for 12" to 15" boats. Fast, powerful. Size 1 1/4 x 2 1/4" x 1"
- No. 16. Deluxe (Diesel styled) with 3 to 1 reduction gear drive. For large boats.

89¢

\$1.25

\$1.50

\$2.00

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K&O Models INC.

14720 Keswick St., Van Nuys, Calif.



ROTO-VALVE GIVES YOU INFINITELY VARIABLE SPEED

No! Roto-Valve is not new. It has been on the market for over a year. Thousands now in use, all over the world, and they are

Recommended by Experts

Special! To you fellows who want to win in the carrier events this year. You will make a wise decision if you use Roto-Valve. Made of light weight, durable aluminum. Infinitely variable speeds from 1500 rpm to full throttle. Only \$4.00, postpaid. Send check or money order today. No C.O.D.'s. Dealer inquiries invited.

MODEL A
for engines
15 thru 36
MODEL B
49 thru 65
For R.C.
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ROTO-VALVE MFG. CO.

910 Douglas, Garden City, Michigan • Garfield 2-6544

Model Boating

YOUNG MEN

two-burner removable alcohol lamp. Power-plant lists for \$15.46, and a 2" dia. 3-bladed propeller complete with shaft, stuffing box and metal strut costs \$2.45. Data sheets on these components give full details of size, may be had free.

Latest K&O outboard cruiser is the Marlin, 16" long boat with 7 1/2" beam that will carry any of the electric outboard motors sold by K&O. Marlin has an unsinkable hull of styrene, colored in white and green. Grooved plywood deck is colored mahogany and all metal fittings are nickel-plated. Boat also has a canvas "convertible" style top over cockpit, all batteries are hidden under cabin and seat. Complete with motor the Marlin is \$14.95.

Small projecting fittings on model boats are highly vulnerable when craft are handled a lot as in traveling. Carl Dunlavy (610 E. Grand Blvd., Corona, Calif.) arranges fittings on his boats so they can be unscrewed and removed for safekeeping. Drawings on page 47 give the idea; upper sketch shows how parts on removable cabin tops may be fastened. For this style of attachment you have to be able to reach the underside of the fitting with a screwdriver. For deck fittings, a nut is cemented in place during construction (lower sketch). Then entire part is twisted to remove. To prevent tightening down too much on the screws—which would compress the wood and crack the paint job—eyelets or combinations of flat washers and short lengths of brass tubing are cemented into the holes.

Scott-Atwater Outboard. An attractive scale copy of the well-known Scott-Atwater Bail-a-matic 33 hp outboard engine has been developed by K&O Models (14720 Keswick St., Van Nuys, Cal.) as companion item to its scale elec-

PEE WEE BATTERYLESS "LIFETIME" RADIO



REALLY WORKS—FOR YOUR LIFE-TIME GUARANTEE! ANTENNA! Works with OUT TUBES. BATTERIES OR ELECTRICAL PLUG-INS. Never runs down. No Burn - Outs. Works in Smallest Radio. Wt. only

4 ozs. **SMALLER THAN A PACK OF CIGARETTES!** Fits in any pocket or purse. GUARANTEED TO RECEIVE LOCAL RADIO STATIONS ANYTIME—ANYWHERE YOU GO! Also Civil Defense Alarm Broadcasts. Sensational new Ferrite Selective Tuner—PERMA-CRYSTAL diode. Super SPEAKER-PHONE. Durable black and gold plastic case.

SEND ONLY \$2.00 (bill, ck, mo) and pay postman \$4.99 COD postage on arrival or send \$6.99 for postpaid delivery. **SENT COMPLETE READY TO LISTEN WITH LIFETIME GUARANTEE AND FULL INSTRUCTIONS.** Free long Distance Antenna given gratis stations up to 2000 miles away. Rush your order now. Available only from:

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THE ROOKIE TRAINER

SENSATIONAL CONTROL MODEL



Send 10c for Comet's New 1955 Catalog

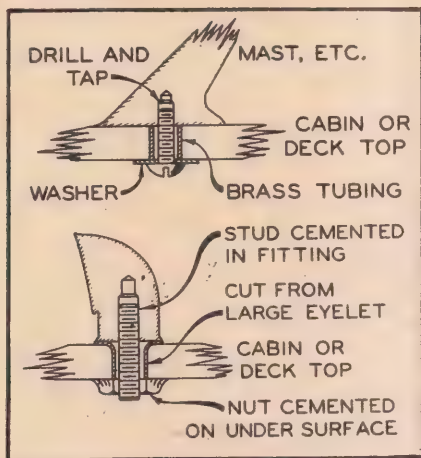
• Kit T-6

Fun for the beginner—thrills for the experts! SHAPED fuselage parts, wing, stabilizer and rudder; motor mount shaped and drilled; landing gear, wheels, etc. Suitable for Class "B" or "C" engines. 3 1/2" span

\$3.50

COMET MODEL HOBBYCRAFT, INC.

301 W. 35th St., Chicago 16, Ill.



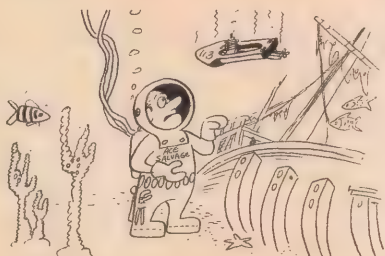
tric outboard models of the Johnson, Evinrude, Mercury and Hurricane power plants.

K&O's newest motor weighs 5 ounces, comes with authentic gold and green colored finish of real S-A job. Furnished with the motor are battery clips and stand.

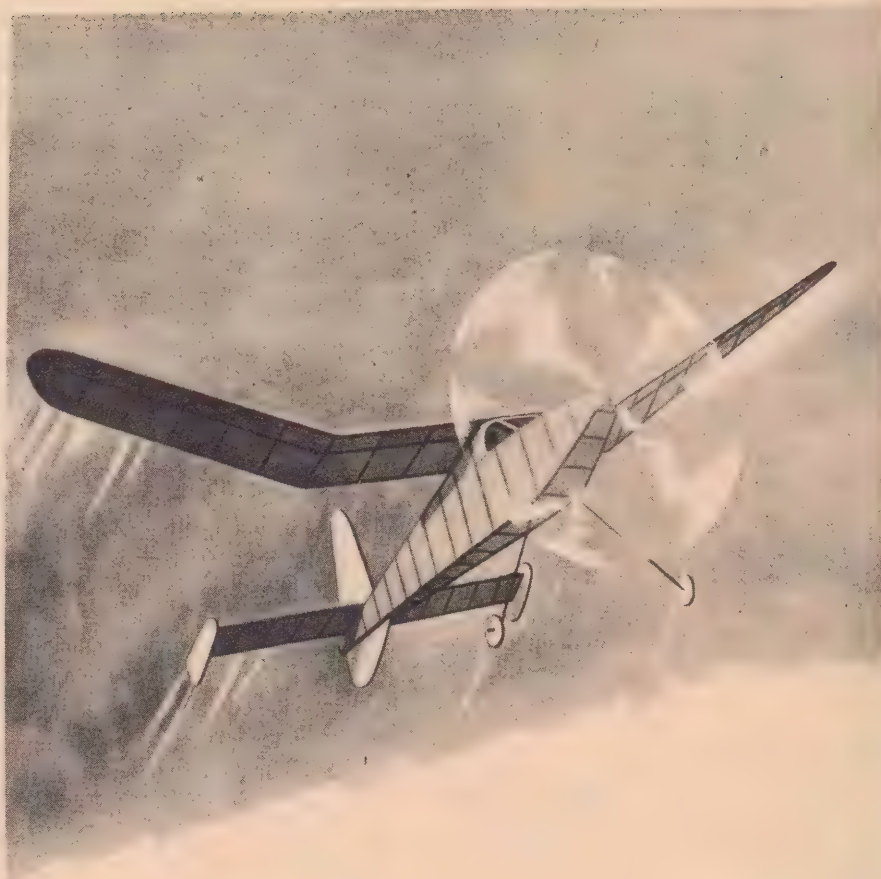
Valuable book. Designs and descriptions of 151 modern power and sail pleasure boats by 88 different naval architects are featured in Volume II of "Boats Today," published by Universal Motor Co. (541 Universal Drive, Oshkosh, Wisc.). The new 132-pager features a special section which carries designs and details on today's popular small family cruisers and runabouts, many under 20 feet in length, with Vee-drive inboard power. The first volume of "Boats Today" published by Universal several years ago sold more than 20,000 copies in five printings. New book can be obtained for \$1 from Universal.

Not much different in size than many of the models constructed by readers of this dept. are miniature seaplane hulls which undergo really extensive testing at new 300' model seaplane towing tank, part of hydrodynamic laboratory being erected by Convair Division, General Dynamics Corp. There will be two of the 300' long towing sections, plus a 100' square basin where "turning tests" can be made; for the latter, special devices can kick up artificial waves and all sorts of "dirty" weather conditions, for rough water studies. Speeds up to 68 mph can be attained in the towing sections, which are 12' wide and 6' deep. An electric-hydraulic system propels the carriages by means of an overhead cable. Carriage can be accelerated to the full 68 mph in 50'.

Recording devices tell exactly how the hull behaves, and if it is fitted with wings, other devices will give air loads on the wings. One towing section is fitted with plate glass windows near the center, for recording by camera.

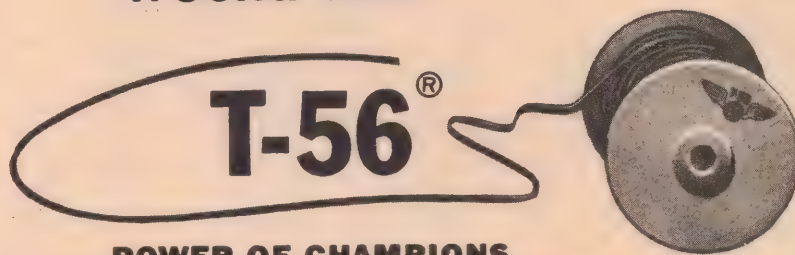


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for **FUN**
or **FAME...**

fly low-cost
rubber-powered planes
wound with



UNITED STATES RUBBER COMPANY
ROCKEFELLER CENTER • NEW YORK

Tornado

ANNOUNCES NEW 3-BLADE PROPELLERS

WE PRODUCE THESE ONLY

in Beautiful SAFETY Crystal

they're Crystal CLEAR for SAFETY and BEAUTY

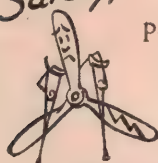


RIGHT HAND
(PUSHER)



LEFT HAND
(TRACTOR)

Safety!



BAD LANDING
FRACTURE
CAN BE SEEN!

Tough, high flex plastic, engineered for maximum thrust at all speeds. Designed to look like scale propellers . . . and priced low enough for flying too!

ONLY
20c
EACH

No hidden AIR BUBBLES! We supply only in "clear" plastic . . . full visibility thru and thru protects you from hidden flaws. No hidden FRACTURES from unlucky landings. Factory safe-tested at 25,000 RPM!

Safety!



NO HIDDEN
AIR BUBBLES!

SIZES: 6-3 (ready now) right and left. 6-3, 6-4, 7-3, 7-4, 5-3, 5-4 (soon).

DEALERS: Handy shelf-dispensing package, all sizes, 2 color with full information. ORDER NOW.

2-BLADE Crystals: Watch for this fine SAFETY line ready soon, too!

GRISH BROTHERS, St. John, Indiana

LATEST "CUSTOM MIDGET" RADIO

CUSTOM
RECEIVER



RELAY
INCLUDED



CUSTOM
TRANSMITTER
BOX INCLUDED



ALL THREE
\$9.98

DEALERS WRITE FOR PRICES

RECEIVER TUBE "IDLES" WHILE RELAY REMAINS IN UNENERGIZED STATE. (saving tube and battery)

TUBE CURRENT INCREASES and RELAY BECOMES ENERGIZED ONLY WHEN TRANSMITTER IS KEYED

SHOULD RECEIVER or TRANSMITTER FAIL WHILE IN USE MODEL COMES IN RATHER THAN FLYING OUT OF SIGHT (This new type of "Fail Safe" operation fully explained in our instructions)

Fully Re-Designed "CUSTOM RECEIVER" weight under 3 ounces including 10,000 ohm relay (relay included) plus Silver Ceramic Trimmer, midget resistors & condensers, Nylon Coat Coil wire etc. Uses one X F G I Tube which IDLES while relay not energized saving Tubes life, Batteries etc. "CUSTOM TRANSMITTER" 27 M C Exam. Free Band with pre drilled base etc. Transmitter box only 4 1/2" x 5 1/2" (Box Included) may be hand held or placed on Field. Has range of 1 mile or more. Full Drawings and instructions included. "CUSTOM ACTUATOR" of new magnetic principal operates both rudder and elevators or rudder alone off battery supply, no rubber used for Boats, Aircraft, or Cars of small 1/2 A size up to large 8 ft. models. You do not have to be a Radio Expert to assemble the 3 units, all parts are tagged and marked to correspond to drawings.

"CUSTOM MIDGET" RECEIVER
TRANSMITTER and ACTUATOR **\$9.98** ☐

Also Available "STANDARD MIDGET I" Radio kit, this group of 3 units, same design as above, same Relay, Same type Transmitter and Actuator. The difference from above is the Receiver weight which is greater (slightly over 4 ounces) Heavier components used.

"STANDARD MIDGET I" RECEIVER
TRANSMITTER and ACTUATOR **\$6.98** ☐

PLANS FOR THE "CUSTOM MIDGET" all three units . . . 50c ☐

"RADIO CONTROL OF MODEL AIRCRAFT" \$3.98 ☐

"RADIO CONTROL OF MODELS" 2.50 ☐

"RADIO CONTROL SHIPS, BOATS, AIRCRAFT" 3.98 ☐

"SIMPLE RADIO CONTROL" 2.98 ☐

"SPECIAL 10 FOOT TRANSMITTER AERIAL" . . . \$1.00 ☐

X F G I tube . . . \$3.50 <input type="checkbox"/>	0 to 3 Milliammeter . . . \$3.50 <input type="checkbox"/>	Soldering Iron \$2.98 <input type="checkbox"/>	Black Crackle Finish
3-A-4 tube . . . 1.00 <input type="checkbox"/>	0 to 50 Milliammeter . . 2.75 <input type="checkbox"/>	Battery Tester, reads 0 to 2 Volts and 0 to 50 volts 2.98 <input type="checkbox"/>	Transmitter Cases
3-A-5 tube . . . 1.35 <input type="checkbox"/>	Both Meters above . . . 5.25 <input type="checkbox"/>	6" x 5" x 3" \$2.98 <input type="checkbox"/>	6" x 5" x 4" 3.25 <input type="checkbox"/>
Keying Switch 50 <input type="checkbox"/>	Peterson 27.255 M C	6" x 6" x 6" 3.50 <input type="checkbox"/>	10" x 8" x 7" 3.98 <input type="checkbox"/>
Micro Switch 98 <input type="checkbox"/>	Z-9 Crystal 4.85 <input type="checkbox"/>	Electric Motor 6 volt for Boats 2 to 4 Ft. \$9.50 value 3.88 <input type="checkbox"/>	Neon Bulbs 15 for 1.00
Photo Elec. Cell . . 98 <input type="checkbox"/>	Rosin Core Solder, Kesters 3 ounce box . . 50 <input type="checkbox"/>		
Variable Resistor . 50 <input type="checkbox"/>			

25c ☐ NEW and FULLY REVISED Radio catalogue. Shows parts as low as 1/2 to 1/4 the price you normally pay. Also gives more details, more photos etc. of our kits. . . . **25c** ☐

MODELLERS—Check off each item you wish to order above. PRINT YOUR NAME AND ADDRESS on a separate sheet of paper with above order. Send REMITTANCE IN FULL.

RADIOMODELS, BOX 36, DEPT. A BALTIMORE 6, MARYLAND

(Continued from page 40)

poses and define who is eligible for membership.

The bylaws should define the club officers and their respective duties; state the term of office (generally twelve months); indicate when and where regular and special meetings shall be held; state the annual membership dues; outline the regular committees and state how amendments can be voted to the constitution and bylaws.

Suggested committees are: membership committee, meeting program committee (a most important committee), social committee, prizes and awards committee and public relations committee.

It is most important that the formal portion of all club meetings be short, snappy and interesting. This part of the meeting should include such things as the roll call, reading and correction of the minutes of the last meeting, committee reports, unfinished business, announcements, club plans, new business and adjournment. The formal section of the meeting can be followed by entertainment, a model building session with instruction and refreshments.

Speakers. In almost every section, individuals can be found who make very interesting speakers at club meetings. They can be located in aviation clubs or factories, airlines and military installations. Most of these people enjoy a question and answer period afterwards.

Movies. Aviation movies are always a popular attraction at club meetings and many very interesting films are available on a loan basis. Check your local airline

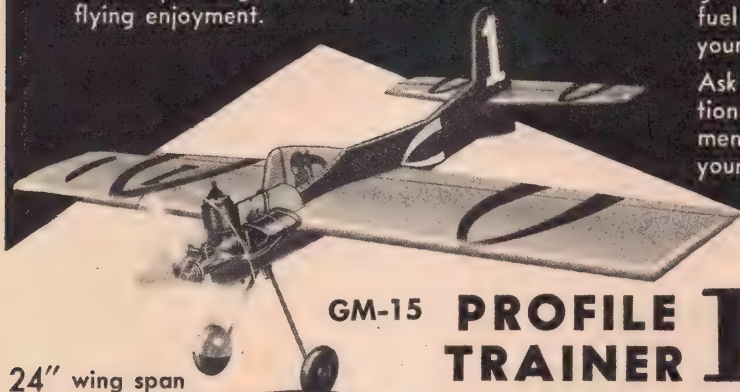
(Continued on page 56)

Guillow's *Announces the first* **AGE TAILORED** **U-CONTROL TRAINER PROGRAM**

Whether you are a beginner or expert, Guillow now has a U-Control Trainer specifically designed for you! In response to many requests, a junior trainer (for small bore engines) and an advanced trainer (for large motors) has been added for your flying enjoyment.

Best of all, you can now choose the correct accessories to complete your model based on Guillow tested "best flying combinations". This vital information, furnished in each kit, eliminates all guesswork in selecting the proper engine, propeller, fuel tank, and other accessories needed to fly your model.

Ask your dealer about the details of this sensational new program — he will be happy to recommend the trainer and accessories best suited to your requirements.



GM-15

PROFILE TRAINER I

24" wing span

"America's most popular trainer"

GM-4

PROFILE TRAINER II

U-CONTROL GAS MODEL

U-CONTROL GAS MODEL
for engines from

.049 to .099

\$3²⁵



30" wing span

for engines from
.14 to .19

\$4⁵⁰



36" wing span

GM-16

PROFILE TRAINER III

U-CONTROL GAS MODEL

"New Model for the large engines"

for engines from
.19 to .36

\$5⁹⁵

PAUL K. Guillow INC.
WAKEFIELD, MASS.

If not available at your Hobby Dealer send direct to factory adding 25c packing and postage in U.S.A., 40c outside U.S.A.

POLK'S

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POLK'S

EVERYTHING FOR THE HOBBYIST & THE PROFESSIONAL

MILLS MOTOR

with 2 SPEED THROTTLE **13.95**
 Spec. — Displacement:
 .081 cu. in. Bore .406
 in. Stroke .625 in. Wt.
 3½ oz. Max. B.H.P.:
 .093 at 10,000
 rpm. Pow. rat-
 ing: .07 B.H.P.
 per cc. Max.
 tor.: 12.4 oz.-
 in. 5-6,000 rpm



E.D. Super Power DIESELS

• E. D. 21 cu. in. Mark 4
 (Class B) **\$19.95**
 • COMPETITION SPEC. 12
 (Displ. w/cut-off) **\$13.95**
 • E. D. .065 cu. in.
 BEE **\$11.50**
 • E. D. .15 cu. in. Racing
 Special **\$16.95**

WEBRA DIESEL
ENGINES

NO BATTERIES!
 NO WIRES! NO FUSS!

• WEBRA Record .09 cu. in. **\$8.95**
 • WEBRA Winner .15 cu. in. **9.95**
 • WEBRA Mach. 1 .15 cu. in. **13.95**



Aristo SWITCH MOTOR



Plastic encased. Fea-
 tures built-in switch
 for forward, reverse. **\$2.50**

ARISTO-TOP
ELECTRIC MOTOR

• Redi-Mount
 • Plastic Case
 • Powerful
 • Sturdy—**\$1.25**

PROPELLERS
FLEXIBLE PLASTIC

6x4	.75	8x8	1.00
7x8	1.00	9x8	1.25
8x4	1.00	10x8	1.40
9½x4¾	1.00	11x5½	1.40
8x6	1.00	14x6	3.00

POLK
BUILDING

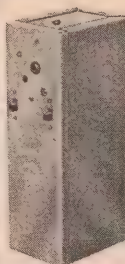
POLK'S HOBBIES

VISIT
 WORLD'S
 LEADING
 HOBBY-HOUSE

TRANSMITTER KIT

Aristol MOPA

Designed by Ed Lorenz, the MOPA is the most advanced transmitter available. Features: printed circuit chassis • 27¼ frequency • high tolerance components • extended range design • "tuning eye" for fast checking • comes with instruc. Kit **\$14.95**
 Ready-to-Use (less bat.) **19.95**



ARISTO MULTI-TESTER



Designed for R/C Enthusiasts! Full 25½" Meter Face. A sturdily built, testing unit covering EVERY R/C need—2%. This is not a "reworked" surplus test meter. • All M.A. readings to 3000 M.A. • Moving coil type meter • 100 ohms to 10K • All DC v. readings to 200 Volts • Zero adjusting screw • Ohms adjust • Black and Red test leads, prods sup. **14.95**
 Hi-impact, black plas. case.

3-D 2 TUBE RECEIVER

Designed by Ed. Lorenz for Aristo-Craft, printed circuit and hi-quality subminiature parts guarantee trouble-free assembly and operation. Can now be transistorized at no extra cost. Send for free data. KIT PRICE **8.95**
 KIT with Tubes **12.95**
 READY-BUILT with Tubes **17.50**



SIGMA RELAYS



8,000 ohms •
 Factory Set and
 Guaranteed.
 4F **\$6.00**
 26F **\$8.50**

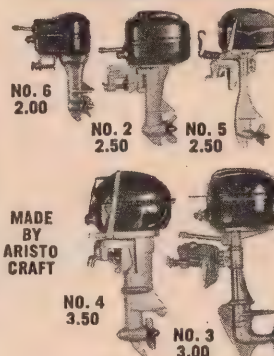
Clockwork Escapement

FOR BOATS
 & PLANES



Ideal for marine use, self-powered with enclosed spring wound motor. For two or four position operation. Weight: 3 ounces. **\$11.50**

OUTBOARD MOTORS



MADE
 BY
 ARISTO
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A complete range of Electric Outboard Power Plants designed to power boats from 12" to 24" • Per Mag Motor • Steerable • Operates on 3 to 12 volts D.C. • Order yours by number to fit your needs.

DOUBLE PER MAG

Redi-Mount, 1.5 to 6 V.
 Battery Operation

No. 0.1.00 No. 3.2.00
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ARISTO-REV MOTOR



• Overall lgth.
 23¾" • Ball
 Bearing • Max.
 Dia. 1" • Wgt.
 2¼ oz. • Car-
 bon Brushes 4800 R.P.M. and power
 on 4½ Volt • 1/1000 Amp. drain •
 App. 40 hrs. on 2 Pen cells **\$2.95**

MARINE POWER-PACK

Ready to install
 in motor boats
 —vehicles, etc.
 Contains Motor
 Mount, Switch,
 Battery Box,
 Universal Joint
 Screws, Light, Life Preserver.



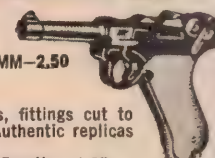
A. FOR SMALL BOATS **\$1.75**
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AIR-WHEELS



Inflatable,
 with Adapter
 super-light
 weight. 1 yr.
 guarantee

2" **2.95** • 3" **4.95**
 2½" **3.95** • 4" **5.95**
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ANTIQUE GUNS
CONSTRUCTO KITS

Luger 9MM-250

All parts, fittings cut to
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Colt .44 Frontier—**1.95**
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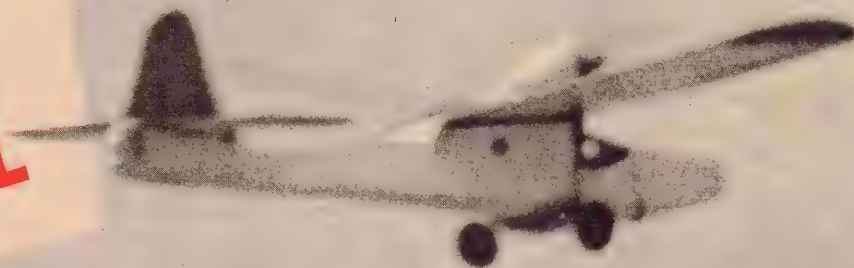
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RADIO CONTROL

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■ Photographic honors this month go to Oakland, Calif., hobby man Dale Root for his picture of Bob Heise's R/C flying boat in action.

"Liberty Belle" and Mrs. Louise A. Renne (3236 E. 7th St., Tulsa 4) pose in Photo A. Mrs. Renne says one shown, a *Young Men* design by Dick Schumacher, is second her husband has built, this having symmetrical stunt wing. Has RE via Bonner escapements, pulled by Atwood Signature .049. Flies considerably faster than one with normal wing, also better in wind; it will do inside and outside loops, rolls, inverted flight. Mrs. Renne, very much interested in R/C, feels it is high time wives have voice in what takes their husbands away from home on every calm day. Symmetrical "Belle" pleases her because of economy of operation, small size (easy to transport), fine stability, ease of handling, and lastly—because of these reasons she is no longer an R/C Widow. She goes along on all flying sessions.

Outsize Livewire Senior in Photo B is held by owner C. G. Morency (4651 Park Ave., Montreal, P. Q., Canada). Big job was result of his having built all the Livewire series; C.G.M. had such success with 'em he felt enlarged version might be interesting. Worked out fine; 87" span, 1330 sq. in. wing area, weighs 14 lbs. Fox .59 fitted with Bramco throttle, radio is Babcock 3-channel. First control system was dmeco servos for rudder-engine control. Bonner servo on elevator. When photographed plane had dmeco servo on rudder; Bonner elevator servo had been attached to Bramco throttle. Mr. Morency fits planes with safety device consisting of relay with large electrolytic condenser across it; re-

lay is arranged to keep engine running as long as signals are sent every 15 seconds or less. If no signal is received within this period, engine is cut off.

Batch of simple transistor circuits seen in diagrams C and D. All are adaptations of transistors to single hard tube receivers. Diagram C shows Citizen-Ship 465 mc. receiver so fitted. Normal circuit is seen at left and below dash lines; addition of cheap transistor and single resistor (and transfer of relay to Collector circuit—as depicted above dash line) greatly improves performance, according to James Polles (56 Berks St., Highland Park, Easton, Pa.). Receiver is type AR, but same idea should work as well with the CR. Low-cost transistors of PNP type such as CK722 and G.E. 2N107 will do fine. When transistor is added, original B plus connection is not used, 6AK4 receiving its B power through resistor connected to base of transistor.

This resistor should be around 330 ohms, but experiment might show better results with values from 200 to 500 ohms. Plate current of 6AK4 is checked through jack J1, while relay current may be read at J2. Note that DPST switch must be used; if only the 6 V. supply is turned off, current may still flow through transistor and slowly drain B battery. On 45 V., 6AK4 idles at .1 ma., rises to .5 ma. with signal; at same time transistor goes from zero to 3-3.5 ma. With a 67½ V. supply, 6AK4 rises to .6 ma., but relay current goes from zero to 10 ma. When making first tests, 500,000 ohm variable resistor in series with meter plugged into J1 will enable builder to study effect of varying 6AK4 current upon operation of transistor. Jim is long-time model builder who took up R/C about four years ago; he is member of Model Airplane Doctors of Easton.

Mini-Mac fitted with transistor output

is shown upper right in Diagram D; this circuit by John Greenwood (251 E. Woodland Rd., New Milford, N. J.), developed from original M-M he made. V1 was originally 1AG4, later replaced with CK548. The 1AG4 idled at about 1 ma., dropping to several tenths with signal. The 548 idles lower, and in addition takes only 10 ma. filament current, so is ideal for submidget installations, as a single "half-pencell" will give good life. John's original tests of CK722 were not too successful, as he could not get them to drop to zero with signal-on; he had good results from Tungsol types DR101 and DR111. Recent CK722's, much improved, will probably work as well. In any case, transistor current with no signal is around 3 ma. (it may be changed by varying resistor R) and it should drop to zero or very near it with signal. On this drawing, as on the other two, "Out" means normal output point of receiver, where it connects to sensitive relay. Current of V1 may be checked at this point, while relay current is measured with a meter between V2 collector and the relay.

Circuit very similar to foregoing was sent in by Owen S. Black (2833 Clover Lane, Sacramento, Calif.), who has also found the Mimi-Mac to do best in such setups, as he has been using B voltages of only 12-18. He would like to hear from other experimenters who have been able to get such single hard tubers as the C-S, ECE and Collin-Craft to function satisfactorily on these low voltages. Drawing in lower left, Diagram D, shows an arrangement Owen has used to get the relay current to idle low and to rise with signal (this section is had with circuit in Diagram C, but M-M and similar receivers fitted with transistor give high relay idling current, which drops when signal is received). Though two transistors are used, they may be

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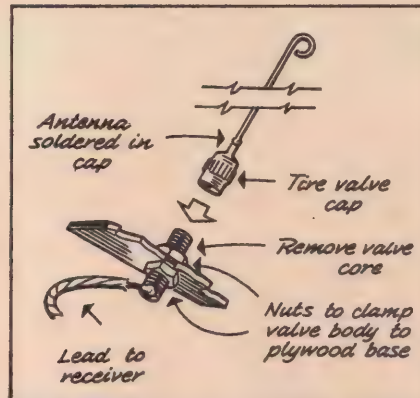
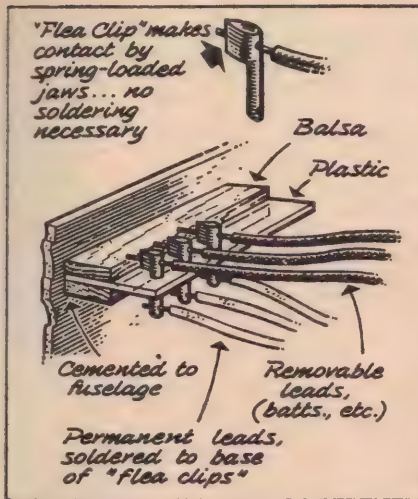
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Sketch E (above): idea for R/C antenna.

Sketch F (left): light socket arrangement.

Radio Control

vides 100% modulation. Receiver said not to be sensitive to "electrical noise" in model. Concern is readying 2-channel tone outfit and proportional actuator.

Manufacture of Schmidt reed multi-control equipment has been resumed; this line has been off market for some months. As in past, only type available is 5-channel outfit. Prices and other data from your hobby shop, or from Schmidt Radio Controls (850 E. 38th St., Erie, Pa.).

Relay Eliminator Kit by Newx Products Co. (Box 643, Union, N.Y.) intended for use with Newx T700 high-resistance escapement will enable builder to produce transistor amplifier that will operate this escapement direct from most types of receivers, making sensitive relay unnecessary. Tests on Newx P-12 heavy duty escapement shows it draws only 550 ma. on 3 V.; will handle tightly wound flat 1/4" rubber. Unit is same size, weight as low current consumption models 506 and 512, but has different coil, heavier springs. All Newx escapements weigh about 1/2 oz.

Ace Radio Control (Box 301, Higginsville, Mo.) announces kits for 27 1/2 mc. transmitter and receiver, each listing for \$7.95. Transmitter uses 8A4 tube, comes in blue hammer-tone case, kit includes tube and crystal, detailed instructions. Receiver is version of Simple-Single receiver, but uses sub-miniature parts; comes complete with 384 tube, 5K Gem relay, plastic case. All parts are new, no surplus. Ace has powerful 3/4 x 1/4" alnico discs for proportional actuators, \$1.20 each. Also same diameter but 1/8" thick for 40c. Ace Range Checker is compact low-power transmitter in 3" x 4" x 5" case; kit includes prefabricated RF unit, crystal, tube, \$6.25 less batteries. Complete line of Gleneco ultra-miniature fixed condensers in valves from 1 mmf. up to .04 mf. stocked by Ace. R/Cers changing from 27 1/2 to 60 mc. operation will be interested in Petersen Z2 crystals for output frequency of either 51 or 52.5 mc., \$3.95 each.

All Mac II transmitters made by ESSCO (58 Walker St., New York 13, N.Y.) will include built-in FSM circuit, so actual RF output can be continuously checked while transmitter is in use. Signals from other

nearby transmitters can also be checked on circuit. Very sensitive, compact relay (weight about 1 oz.) for 6 V. operation with current drain of only 15 ma., \$1.95. ESSCO will have new receiver using 3 hard tubes plus transistor, affording very great range; tuning simple, set may be used for CW or tone. New product is completed R/C boat, based on Ideal Richardson cabin cruiser; complete, ready to use, with transmitter and receiver, \$110.00. Single RK61 receiver that includes Sigma 26F relay, \$14.95 ready to use. New dual control system developed enables user to obtain two controls with any standard CW transmitter; simple changes are required at receiver end, complete set of plans \$2.50. Completed receiver will cost \$44.95; conversion unit to fit existing ESSCO receivers, \$24.95.

Builders who need hot small-sized engine for R/C use might consider modified McCoy .09 available from Model Motors Service (Main St., Mantua, N.J.); this is brand new Mac 9 pepped-up to give more torque, better power at moderate speeds, while still retaining easy starting and handling; \$10. MS will modify builder's own Mac 9 for \$4.00. Same price for modification of owner's engine will apply to new K&B .09. MS actually specializes in such work on larger engines, with most business being done on various sizes of Fox engines.

R/Cers going in more and more for transistors, usually utilize lowest cost units—which vary the most. Good way to test transistors is by means of Transistor Checker, sold in kit form for \$7.95 by Lafayette Radio (100 6th Ave., New York 13, N.Y.). This would make good club project; kit is simple to assemble, is complete with meter and necessary battery. Concern carries line of transistors, sub-miniature components, offers free catalog.

MOPA transmitter is available from Polk's (314 5th Ave., New York 1, N.Y.). Unit is housed in metal case 4 1/4 x 3 3/4 x 10", has bulb for RF indication—bulb does not reduce power output of transmitter. Single 3A5 tube used, kit sells for \$14.95; completed transmitter, \$19.95. Polk's carry new Mallory mercury B batteries; 22 1/2 V unit, \$1.85; 45 V, \$3.24. Companion Mallory type ZM9 (1 1/2 V unit of pencil size), 70c.

SURPLUS ITEMS... Navy Model CWI-60 unit sold for \$5.95 by Clearfield Surplus Sales (310 N. Main, Clearfield, Utah) is of most interest to R/Cers for the 3" bakelite-cased 50 microamp meter it contains; it is housed in



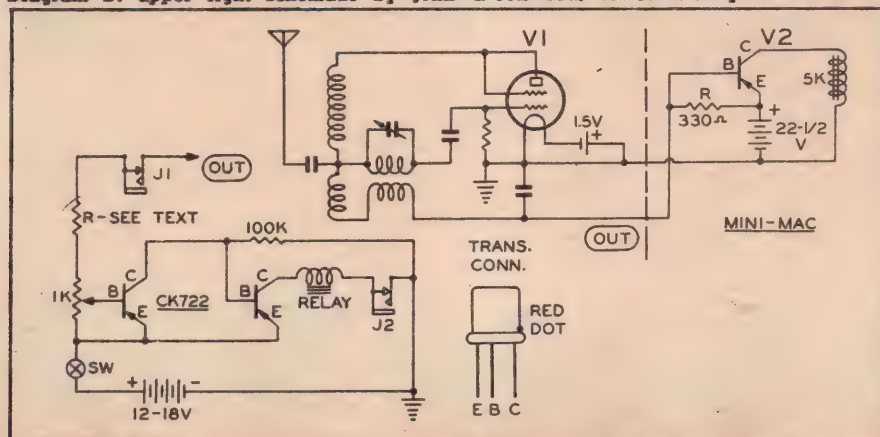
Photos G-J: Madl is back and what a job!

black crackled metal case 8 x 6 1/2 x 5", makes ideal basis for super-sensitive FSM. Also has a few resistors, condensers, switch, cables, other small parts, and is brand new. . . . High grade ball-bearing PM motor with 130-1 gear reduction unit offered for \$6.95 by Practical Engineering Co. (707 N. Sheridan Rd., Tulsa). Intended for use on higher voltage, motor runs well on 6 V, idling at 180 ma., draws 250 ma. when heavily loaded. Weighs 6 oz. with removable gear unit, motor alone measures 1 3/16" dia x 2" long. . . . Latest catalog from Burstein-Applebee Co. (1012 McGee St., Kansas City 6, Mo.) lists many surplus hearing aid parts, including six types of Raytheon submini tubes, at 49c each, tiny output transformers for 59c, earpieces, potentiometers, etc.

Lowered prices are offered on Transistor Power Converter made by B & S Products Co. (Box 185 Mercer Island, Wash.), when bought in lots of 10 or more. Price for complete unit with two 2N104 transistors, ready to use, \$12.00, this drops to \$9.50 for ten or more, and prices for parts are also proportionately lower in quantity. Special transformer can be had wound for \$3.00, or mounted on printed circuit board for \$5.00. This unit will produce 45 V. from a 4 1/2 V. power supply, draws 60 ma. when fully loaded to 4 ma. output current. On 3 V. input, Converter will produce about 30 V., suitable for some transistor receivers, such as CG reed units.

Electronic stroboscope unit made by Gyro Electronics Co. (325 Canal St., New York 13, N.Y.) available in kit form at \$8.95, less special strobe tube; tube costs \$6.95. This concern now stocks five R/C books published in England; all are paper covered except "Radio Control of Model Aircraft," which costs \$2.50. Other 4 sell for \$1.40 and \$2.40, range in contents from most elementary to rather complex control systems. Gyro carries Ripmax semi-proportional pulser, electric motor driven unit which has 2 buttons for right and left, sells for \$9.90. Companion small-size servo unit, \$10.25; larger servo which has limit switches, \$1.95.

Diagram D: upper right schematic by John Greenwood; lower left by Owen Black.



From a very small club to a very large one—we move further west to the LARKS of Los Angeles. Club now considering regular "uniforms," to be worn at special occasions, such as Nationals. We understand 23 LARKS will be on hand at Dallas for R/C event!

Annual banquet and election meeting of the Pacific R/C Society held in Redwood City, Calif., with total attendance of 47, including wives. Pres. is Bill Hitenburger, while Steve Marciel (596 E. 14th St., San Leandro), who sent info, is VP. These two plus Sec. Ed Rockwood and Treas. Alex Schneider all served last year, were reelected. Steve says that George Swank is now member of S.L. Channel Masters and may be reached at 134 Sunset Blvd., Hayward.

Couple of ideas that might help newcomers in R/C: Most builders use BPST or DPST switches for receiver and actuator circuits on their models; we have found DPDT switches more useful since extra lugs not needed for battery circuit closing form useful tie-points. For example, you can hang filament dropping resistor between them, use them for spark suppressor components and like. Another tip; check your small B batteries for cellophane tape over brass contact ends. We recently installed two Burgess U15 22½ V. batteries in a model, were disturbed to find no B current in receiver; further checks showed no B voltage whatever. Batteries are type which have an outer aluminum shell, newest ones have plastic end covering over this. What we *didn't* notice—there was a strip of thin cellophane tape over each end terminal; when this tape was removed we were in business.

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(Continued from page 48)

offices, airplane manufacturers and schools. To show these, a 16-mm sound projector is required. If one is not available to the club it is likely that you can hire one at a nearby photo shop.

Model Building. While most model airplane building is generally done at home, regular club meetings do give the beginner a chance to work on his models under competent guidance. The Senior Advisor should supervise such work and give the members the benefit of his advice.

Publicity (Public Relations). Probably the most effective method of increasing club membership is through publicity. Newspaper editors, radio and TV station managers will cooperate more often than not if you supply the copy. All copy should be brief and should state "who, what, when, where and why." Be sure to double space all copy and include the name and telephone number of a club member who can be contacted if additional information is needed.

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Plane Modeling

(Continued from page 42)

and very pleasing in its very smooth flying. The top multi boys stopped at nothing, all doing the transport take-off, the touch and go, the inverted flight, the outside loops, etc. The difference in flying between last year's Nats and today is like night and day. The CG transistor 5 channel rig is being used by more and more fellows. DeBolt's servos are getting a large play, as is the Bramco throttle, the majority of the fellows using this set up. There are exceptions—Dale Root and Colby Evett.

FAI eliminations at Los Angeles were the largest and by far the best yet. There were 79 entries in the three events—much larger than ever before—and strangely enough Wakefield had 31 of these entries. The Thermal Thumbers with retired Lo Salisbury at the helm elected to run the contest by rounds, which turned out to be the smoothest way—one which all the contestants liked since it provided equal opportunities for flying time, thermals, and allowed the officials present to do their job more than adequately. It was beyond doubt the best contest we have ever seen.

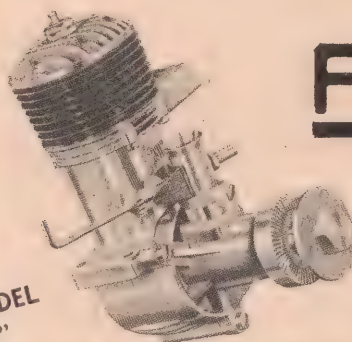
We compiled a lot of statistics which proved most interesting and will discuss them in the order of the events. Wakefield: 31 entries, all models originals except for Swaney's kitted Thunderbuggy. There were 42 three min. or maximum flights. Five entries had 2 max's at the end of the 2nd round—only 2, Fudo Takagi and Dick Baxter after 3 rounds,

(Continued on page 59)

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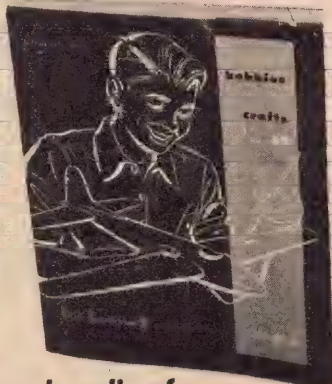
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THE MODEL TECHNICIAN

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■ Typical of the many letters that come in to YM is this from Laurie A. Whitten of Valley Center, Calif.:

"I am very interested in building model aircraft, although I have finished only a few. I always run into trouble when it comes to covering my model. Because I get your magazine every month I know that you answer questions sent in by readers. I would appreciate it very much if you could tell me how to cover."

Well, Laurie, there are various methods, but we thought you might like to see the one developed by hobbyshop man Harry Royse of Los Angeles. After demonstrating his system to customers, Harry says there's never been an instance when the new modeler didn't turn up with a creditable job afterwards. Here are the simple directions. . . .

AN EASY WAY TO COVER

By Harry A. Royse
("World's Biggest Hobby Dealer")

Step One: Apply clear dope to all parts of framework that tissue covering will touch. (Shaded areas in sketch). After dope is dry, sand smooth.

Step two: Same as Step One. Allow to dry thoroughly and sand lightly.

Step Three: Same as Step One—allow to dry thoroughly, but do not sand.

Step Four: Cut paper oversize to fit section to be covered (grain parallel to spars). Wet paper by dipping in pan of water. Place on towel to remove excess water. Place over framework, pull tight, and paint with thinner or acetone at all points where paper touches framework. Thinner penetrates moist tissue paper, softening dope and bonding tissue to framework wherever it was doped previously. Thinner will evaporate before tissue dries, holding tissue throughout drying and shrinking process.

Step Five: Use a sanding block or razor blade to trim off excess paper. Brush down any loose "feather edges" at this point with diluted dope. Allow to dry thoroughly before applying clear dope, then pigmented dops as desired.

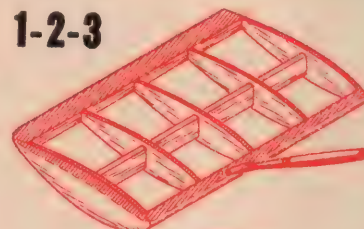
Foregoing instructions apply to fabrics

and heavy tissues. In using Jap tissues (or any other light grades), dry covering is recommended. Or test a small piece for "wet strength" before beginning job, as some brands of tissue are quite weak when wet.

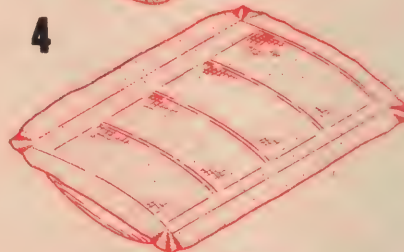
Model Aeronautics Made Painless. That's the title of a 96-page book by the noted aerodynamicist Raoul J. Hoffman. Although small in size it is crammed with the results of a lifetime of experimental work in the full scale and model aviation fields. Among the gems, in addition to priceless mathematical approaches to various model design problems and streamline chores, are such interesting sketches as model-prop making machines, basic data for constructing model wind tunnels and the like.

We understand there is only a limited number of copies of MAMP available.

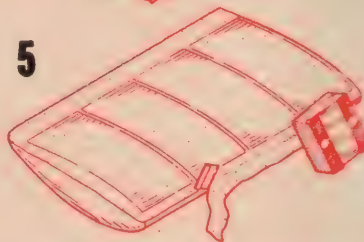
1-2-3



4



5



We suggest any serious model builder and every would-be aeronautical engineer get ahold of a copy. \$1 from Hoffman Products, Box 330, Chicago 90, Ill.

New X-acto Handbook. "Hobby Tools and How To Use Them," unique 96-page manual, devoted exclusively to hobby knives and small hobby tools and presents a sampling of whittling, scale model building, carving, leathercraft, linoleum block printing, metal tooling, stenciling. Each project is accompanied by step-by-step instructional drawings. Also included are suggestions on planning and executing projects, and a bibliography of magazines and books, classified by subject, for those who would go deeper into these hobbies.

Author of "Hobby Tools and How To Use Them" is Robert Gorman. It is available at hobby stores for 75c or directly from the publishers, X-acto, Inc., 48-41 Van Dam, Long Island City 1, N.Y.



(Continued from page 57)

Baxter alone after 4 and 5. Thirteen modelers qualified, 22 completed their flights, there was a total of 120 flights made, 35 percent of which were for maximum flights of 3 minutes. Dick Baxter was the lone man to total 15 minutes.

In Nordic there were 13 entries, 6 had max flights in the 1st round, 3 had 2 max's through the 2nd round, 2 had 3 max's through 3rd round, and one man had 4 maximum flights. There were no 15-minute totals. There were 31 max flights out of the 66 flights made, a grand average of 48.1 percent, which was quite amazing. Ten of the 13 entries qualified, though some of them made it by a few seconds.

In gas there were 12 max's in the 1st round, 2 guys had 2 max's at the end of the 2nd round, 1 after 3 and 1 after 4, but no 15-minute totals. 40.9 per cent of the flights were for max 3 min. limits.

Mac-Jr. Xmtr

(Continued from page 21)

so there will be no high voltage, turn on power and set two sliders on R12 temporarily. Final setting of these sliders should be made when full power is being drawn. Then put vibrator back. Next step is to tune V1; while this is being done it is smart to disconnect screen grid lead of V2—the one to terminal #1—so V2 will not draw excessive current. Connect 0-10 ma. meter across test terminals AB, turn on power, turn screw in L1. At some point plate current should show gradual drop, followed by sudden rise. Proper setting is a bit toward high frequency side of lowest plate current—that is, with core a little further inside coil and nearer chassis.

Now temporarily connect blue bead pilot lamp—No. 44 or 46—as shown in Drawing 1 and open lead between L3 and C6 at "X." Don't use any antenna. Hook V2 screen grid up again, turn on power and quickly rotate C5 till you get sharp drop in plate current on M. Then rotate C6 till you get bright glow in lamp, returning C5 for each new setting of C6, until plate meter indicates 20 ma.

Final checks should be made of filament voltage to both tubes with full load. You can also check grid current to V2. It should be about .8 ma.; if it is radioby means of 0-1 ma. meter at points CD. ally different than this, correct value can be made changing R2. Values of grid current from about .6 to 1.0 ma.

(Continued on page 62)

"Multichannel" offers you the best possible R/C flying. The lightweight dependable system works fine in all normal size models making it easy for you to use multi-controls. Only with "Multichannel" do you get controls completely independent in action and safety. "Multichannel" duplicates full scale flight! Approved and used by the best R/C flyers in the country! NEWLY IMPROVED FOR '55!

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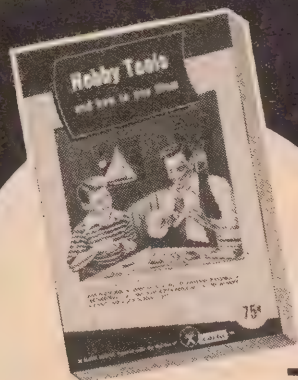
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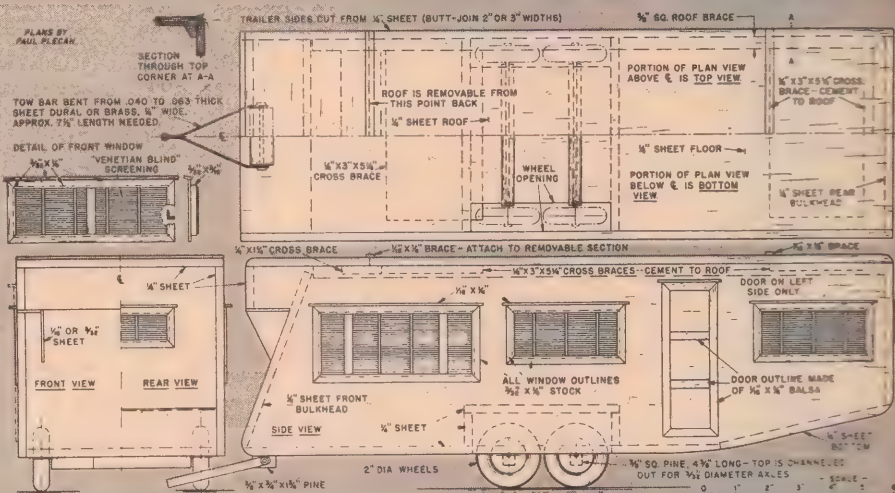
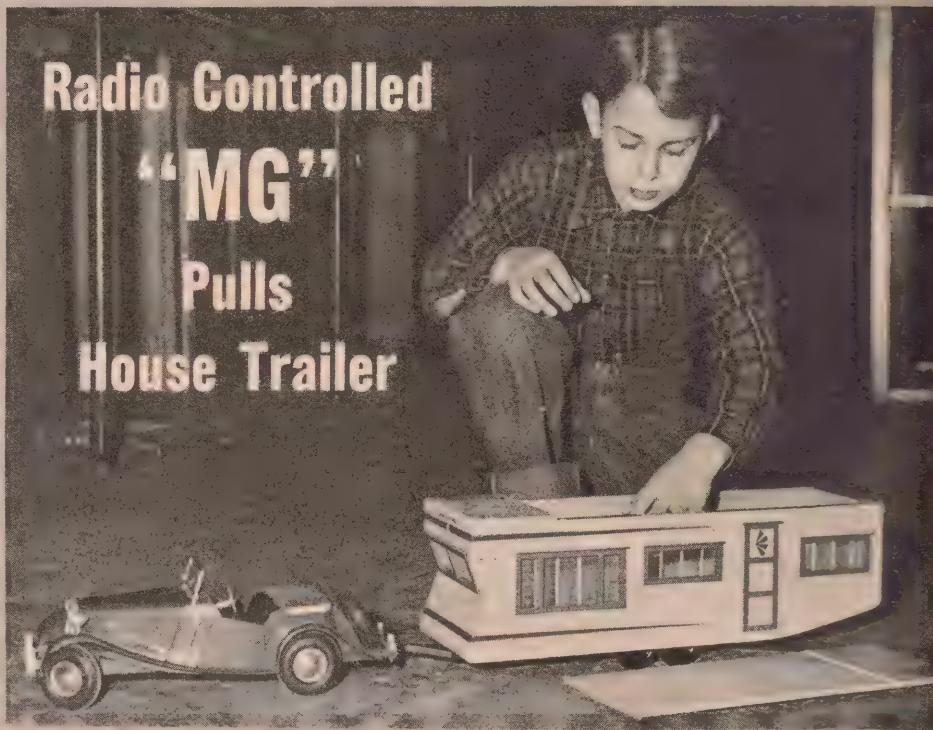
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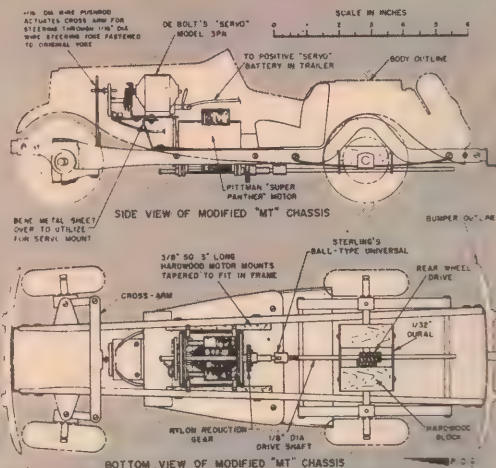
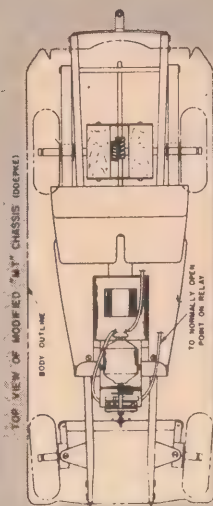
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Doepke's "MT" car was chosen since it is readily available, rugged, and the right size to give you an appealing model combination. Working drawings in 1/2 size.



Half-size plans for R/C "MT"-Trailer on Group Plan #956 from Hobby Helpers, 770 Hunts Point Avenue, New York 59, N.Y. (50c).

■ Since a well-made kit model car is used for the auto in this combination, you are saved a lot of difficult metal work. All that is needed is to install motive power and "power steering." The Doepke car, called an "MT," is a close scale replica of the English MG sports car. You can purchase the kit for it at most any good hobby shop. A Pittman Super Panther boat motor was used in the original, and when you buy this motor, ask also for the countershaft and reduction gear that are made for it. Holes for this countershaft are already in the motor end frames, and on the shaft attach a Sterling ball-type universal coupling. This is required because the springing of the rear wheels allows them to move up and down somewhat.

The motor is attached by means of the furnished wood screws to hardwood strips, which have been cut to fit snugly inside the auto frame sides. The $\frac{3}{8}$ " dia. drive shaft runs in two-sheet dural plates, which in turn are screwed to a pair of hardwood blocks held by car's rear axle. An HO train drive gear must be soldered to the axle, and the matching worm is soldered to the drive shaft. It pays to spend a bit of time getting the two gears to mate smoothly; if you don't hit it first time, slot the wood screw holes in the dural plates, so the latter can be moved up and down slightly.

Needless to say, one rear wheel will have to be soldered or pinned to the rear axle, while the other runs loose.

Steering is accomplished by a dmeco type 3PN Multi-Servo linked to the tie-rod attached to the front wheel supports. The Servo sits up on a bracket bent from $\frac{1}{16}$ " thick aluminum sheet. The linkage must be arranged so that the wheels are centered when the Servo is in its neutral position.

Only other job to do on the car is to attach a trailer hitch—simply a metal strip clamped around the rear bumper with a small machine screw and nut. To make servicing and transportation easier, the wires from the drive and servo motors should be cabled together and run to a plug at the rear of the car; a socket on the trailer then makes it simple to set equipment up for a run.

The trailer is a simple assembly of sheet balsa, most of it being constructed of $\frac{1}{4}$ " thick stock. Cut the sides first and cut out the window openings. Windows should also be cut in the back, before the parts are assembled. A spacious front window takes in the entire area between the triangular sheet pieces. The door is a fake. Very realistic venetian blinds were made from small sections cut from Kaiser Aluminum Screening purchased in a hardware store.

Wheels on the original model were hardwood, simply because they were on hand, but it is strongly suggested that good grade rubber wheels with metal hubs be used. No attempt was made to pivot the axles, as is done on the big trailers with this sort of wheel setup. The model takes any bumps it may encounter with no trouble.

Top of the trailer, from the front $\frac{1}{16}$ x $\frac{1}{4}$ " brace on back, is made removable, for access to the batteries and radio equipment. Since the roof sheeting is used with fore and aft grain, a few heavy inside cross-braces were added to give

(Continued on page 64)

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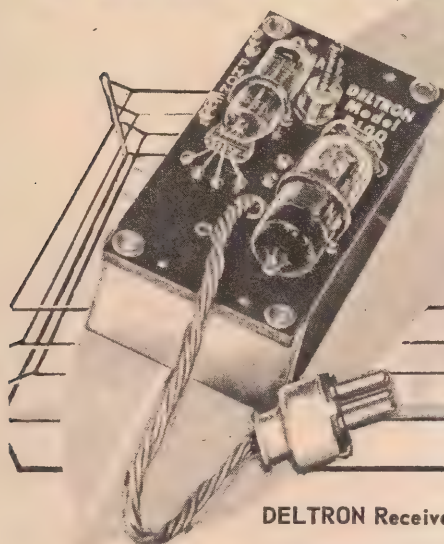
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(Continued from page 59)

are OK. Reading at AB should be around 5.5 ma., but important figure here is correct grid current to V2. As noted above, plate current of V2 should be held to 20 ma.; at this value, power input should be around 3.4 watts; you ought to get about 1.8 or more watts output. Current drain on 2 V. cell—about 6 A.

When you are satisfied all is well, remove test bulb, reconnect broken lead from L3 to C6. Install all parts in case. be sure to run wire from upper end of L3 to antenna mounting screw.

Antenna looks complex, but is quite easily made. Five one foot long sections of telescoping brass tubing carried by most hobby shops are needed. Bottom-most length is 9/32" OD, has 2" long piece of 1/4" brass bushing soldered flush with bottom. Bushing is tapped 10-32 to match screw on case-top insulating mount. These brass tubes are a nice sliding fit inside each other, but we must make joints tight. Second length from bottom has diagonal saw slot at lower end, as seen in Drawing 3B; use narrow fine-tooth blade to make this, be sure not to cut through bottom end of tube. Smooth off burrs, spread slot a bit with screwdriver blade. Make three center punch marks in bottom antenna section to act as stop for second section. Third section up is 7/32" OD, also has lower end slotted. Top of this piece is force fit in hole drilled in lower end of loading coil. Latter is made as shown in Drawing 3A, top end of form is fitted with banana jack.

Fourth antenna section (5/32" dia.) has a banana plug soldered at the bottom and three center punch marks at top, while top section is slotted, but has

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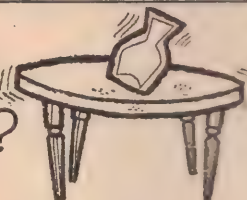
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plastic knob at top end. All sections should fit together without wobble, but can be taken apart in seconds for storage in tool kit.

Before trying to tune up with antenna, set coupling between L2 and L3 about as shown on Drawing 4. Turn on power, turn C5 to point of minimum current; C6 should be at midscale. If you have less than 20 ma., rotate C6 small amount either way, reset C5 to minimum current. C6 will be found quite sharp in setting. If you can't get plate current up to 20 ma. no matter where C6 is set, move L3 closer to L2 and try again. Remember, don't "tune" C6—just move it a small amount, then do your tuning with C5 to reach lowest plate current reading. If everything is right, you will find that plate current meter will vary very little whether you hold transmitter in your hands or set it anywhere. Due to unusual antenna system used, FSM readings will be somewhat higher when transmitter is set up on some insulating support than when it is hand held or on the ground; but in any case unit puts out a potent wallop, as you will find by comparing it with any other transmitters, all the same distance from a FSM.

While results are by far the best with entire antenna in use, and with loading coil as shown, you can still get husky signal out without coil, or even with less antenna sections. We don't advise use of less than three sections, though for shop tests you can go down to one. Always be sure to retune C5 and reload with C6 to get 15 to 23 ma. of plate current, however. Also, with any other antenna arrangement than five sections specified and with loading coil at top of section #3, you will find plate current of V2 varies quite widely when you touch transmitter case or set it down.

Actual field checks show Mac Jr. is almost as good as the "Zebra" transmitter which runs at about same power input, but has big 10' antenna and plenty of "ground capacity" from large case. "Junior" is considerably more potent than 3A4 triode-connected crystal wave antenna. Go out to a clear area with your R/C buddy and his transmitter-oscillator, also with a full length quarterer, take a good FSM along and see how your results compare. We guarantee you'll be pleased!

Parts List: V1—3V4 tube; V2—3B4 tube; two shielded 7-pin sockets for same. L1—see Drawing 5; L2 and L3—see Drawing 4. Xtal—Petersen Z9A; socket to fit. All resistors half watt carbon except as noted; R1—47,000 ohms; R2—15,000 ohms; R3, R10, R11—100 ohms; R4—39,000 ohms; R5, R9—200 ohms; 47,000 ohms, 1 watt; R12—2 ohm 10 W. wirewound with two sliders. C1, C3, C4, .01 mf. ceramic



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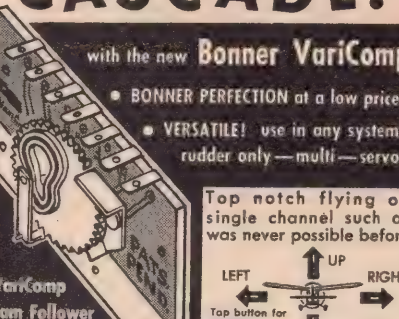
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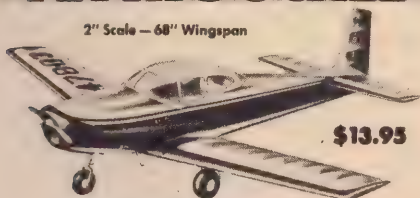
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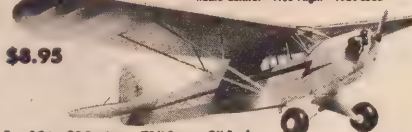
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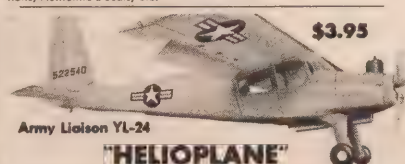


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"MG"

(Continued from page 60)

it strength. Six-inch-wide sheet is required for the top and sides; if you cannot obtain this, the more standard 3" wide sheets may be cemented together.

Attach the tow bar to a hardwood strip that cements under the forward end of the trailer. The bar should be pivoted to this strip so that it can drop downward—as seen in the side view—but will not go up any further than horizontal with the bottom line of the trailer. Then the batteries and other parts are loaded in to put a small amount of weight on the forward end of the trailer; in other words, it should be a bit "nose heavy," so that there will be some weight on the trailer hitch of the car.

For a good finish, it is suggested that the entire trailer be covered with model plane paper, doped on. This should be applied before any of the window frames, door and braces are attached. The paper provides a much better base for whatever finish you want to apply to the trailer, and the window frames and other external details may be cemented on it.

Probably no details need be given of the radio equipment, since it may vary from the simplest single channel rig—which will control the steering servo—to multi-channel apparatus which could steer the car, start, stop and reverse the drive motor (just as with the big ones, backing up this rig will really give you a workout!), and even turn lights on and off and blow a horn. Because of all the space in the trailer, you can pack in just about anything you want, including a storage battery for the drive motor.



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(Continued from page 16)

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Tech Guide

(Continued from page 10)

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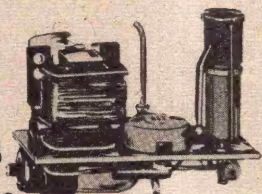
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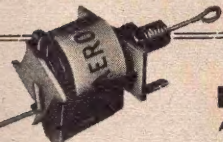
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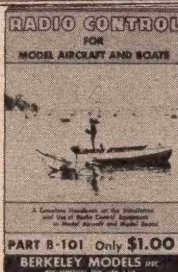
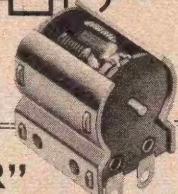
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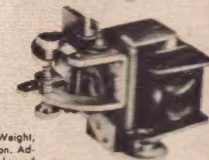


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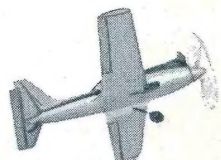
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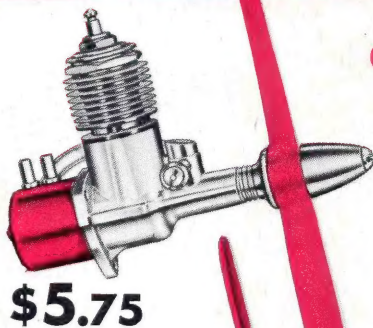
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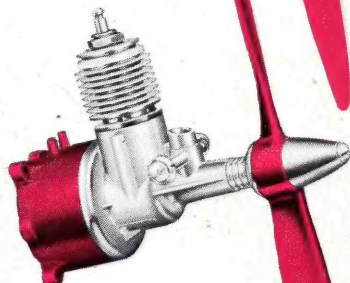
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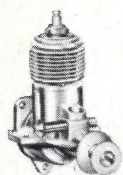


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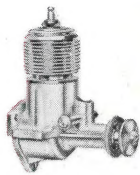
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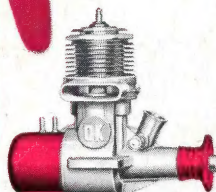
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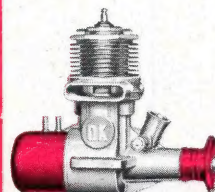
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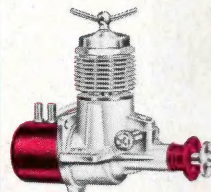
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